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REPORT

OF THE

Canal Commissioners

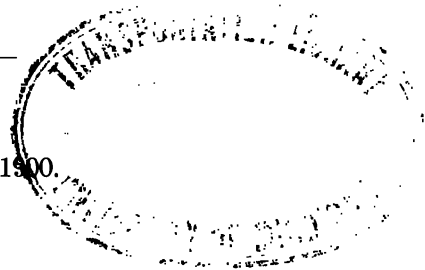
OF

ILLINOIS

TO

GOVERNOR JOHN R. TANNER

DECEMBER 1, 1900.



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ERRATA.

Page 67, line 14, omit figures "228."

Page 79, paragraph 5, line 2, for "1820," read "1830."

Page 83, paragraph 1, line 4, for "1931" read "1831." In line 7, for "1834" read "1824."

Page 85, title to signature to read "Engineer I. & M. C."

Page 122, in first line for "N," read "No."

Page 135, paragraph 2, line 10, Bucklin's reply, for "found to," read "the." In line 11 for "M," read "Mr." Guion.

Page 142, in date line, for "Joliet" read "Juliet."

Page 150, paragraph 2, line 8, figures "14" should read "7," and "7," read "14."

Page 185, line 4, for "of" read "in."

Page 190, in "Report," paragraph 2, line 15, read "This first survey."

REPORT OF CANAL COMMISSIONERS.

To His Excellency, JOHN R. TANNER, Governor of Illinois.

SIR:—We have the honor to submit herewith our report of the business transacted by us for the fiscal year ending November 30, 1900.

It is with satisfaction that at the conclusion of the fourth year of the management of the canal by its present board of commissioners, we are able to report its affairs in excellent condition, in view of the many perplexing problems which have confronted us.

A comparison of our receipts and expenditures will show a greater outlay than income. This must not be attributed to the necessary and actual maintenance of the canal under ordinary circumstances. One fact which has largely increased our expenditures has been the unusual amount of litigation arising in the past year. The interests of the State and the canal have been such as to make our appearance in court unavoidable. Loss of revenue is principally due to the failure of the sanitary district of Chicago to fulfill the conditions of its contracts with your commissioners.

The case of Werling vs. Ingersoll, involving the title of the State to the ninety foot strip in the even sections, is still pending in the supreme court of the United States. It will probably be reached and disposed of some time in January or February, 1901.

The cases of the Canal Commissioners versus the Sanitary District of Chicago, and of B. M. Chipfield, State's Attorney vs. The Sanitary District of Chicago, were decided by the supreme court on February 19, 1900, and a rehearing was denied the sanitary district, April 17, 1900. The supreme court decided, as we contended, that the sanitary district act did not contemplate that the dams at Henry and Copperas Creek should be removed by the sanitary district; that the dams were entirely under the control of the canal commissioners and should only be removed by them when they shall find that an additional supply of water has been added to the Illinois river sufficient to maintain a depth of not less than six feet from those dams to the first lock of the Illinois and Michigan canal at LaSalle. This decision saves to the State property costing a million dollars, experience having demonstrated that our position was entirely correct, and that there is no necessity for removing the dams in order to prevent overflow along the Illinois river.

On November 1, 1900, the sanitary district of Chicago notified us in writing that they had been advised by their general counsel and attorneys that the contract entered into by the sanitary district of Chicago and the canal commissioners, December 21, 1899, (a copy of which is set out in our report of 1899), whereby the sanitary district was, among other things, required to maintain throughout the Summit Level of the Illinois and Michigan canal, a navigable depth of six (6) feet of water, was void, and that the Bridgeport pumps operated by the sanitary district for the purpose of supplying water to the Summit Level, would be stopped on November 15th, and not again put in operation.

The effect of shutting down the Bridgeport pumps would destroy navigation on the Summit Level of the canal for the reason that the surface of the water at the Bridgeport lock had been reduced two and one-half to three feet below its normal lake level by the turning of the water into the sanitary district channel. In order to prevent this, on November 8, 1900, we filed a bill in the circuit court of Cook county, to enjoin them from violating said contract. The sanitary district of Chicago filed an answer, and the case was tried immediately before Judge Dunne, who took it under advisement on November 30th. His decision has not yet been rendered.* In the taking of the evidence of this case, it was disclosed that only twice since the water was allowed to flow into their channel, January 17, 1900, had it been possible to provide a flow of 300,000 cubic feet of water per minute as required by law. One of these occasions was in June and the other was in September, 1900. It also appeared that the full flow of 300,000 cubic feet per minute required by law, can not be turned into the channel without destroying navigation on the Chicago river, until the river has been widened and deepened and an additional supply of water obtained by way of the Calumet river.

Prior to 1871, the Summit Level of the canal was supplied with water for navigation purposes from the Calumet river through what is called the Calumet feeder, running from Blue Island to the Illinois and Michigan canal at Sag. Upon completion of the "deep cut" in 1871, this method of supplying the Summit Level of the canal, and the feeder itself, was abandoned.

In our previous reports we have frequently called attention to the desirability of restoring the Calumet feeder, so as to provide water for navigation purposes to the Illinois and Michigan canal, and at the same time affording means for the disposal of the sewage of the Calumet region, which at present is discharged into Lake Michigan, thus poisoning the drinking water of a thickly populated district, and also for the purpose of establishing an additional navigable connection between Lake Michigan through the Illinois and Michigan canal to the Mississippi river. At the conference between your commissioners and the trustees of the sanitary district on December 6, 1899, at which you presided, you made certain suggestions along this line in writing, the salient points of which and the advantages to accrue to the State and to the sanitary district of Chicago are set out

in our annual report of 1899. At that time the sanitary district trustees refused to consider any proposition looking toward the re-establishment of the Calumet feeder and the questions at issue between us and the sanitary district trustees, in regard to supplying the Summit Level of the canal with water, were afterward settled by their entering into the agreement of December 21, 1899.

It would seem now that the suggestions made by you at that time provided the only feasible solution to the controversy between the State and the sanitary district, as the results obtained from turning water from Lake Michigan into the sanitary district channel through the Chicago river, have demonstrated that the construction of the channel from the Calumet river, by way of the Calumet feeder, is absolutely necessary in order to supply to the sanitary district channel the amount of water required by law. While this proposition was declined by the sanitary trustees at that time, it has since been openly admitted, and in proof thereof and as evidence of the real purpose of the sanitary district in deciding to close down the pumps at Bridgeport in violation of the contract of December 21, we will quote from the official proceedings of the sanitary district of December 21, 1899. The quotation is from the minority report in reference to the adoption of the contract referred to and is as follows:

"In the opinion of the undersigned the contract proposed to be entered into between the sanitary district and the canal commissioners imposes a perpetual burden upon the sanitary district for which there is utterly no consideration or compensating benefits. The minority has insisted most earnestly that if any agreement should be entered into by which the sanitary district should assume the burden of perpetually maintaining the water supply of the Summit Level of the Illinois and Michigan canal, then, and in that case, the Sag channel of the canal, long since abandoned and of no further use in maintaining said Summit Level, should be ceded to the sanitary district for its uses in the construction of the channel soon to be necessary in connecting the main drainage channel with the Calumet river.

"It is no longer a matter of speculation that immediate steps must be taken to protect the water supply of 300,000 people in the southern and southeastern portion of the city by preventing the longer pollution of the Hyde Park and lake water cribs from the sewage and poisonous drainage of the Calumet river. The early necessity of providing an increased volume of water to comply with the requirements of law, suggests that the double problem presented can be best solved by the construction of an auxiliary channel to divert the flow of the Calumet river from Blue island into the main drainage channel.

"The Illinois and Michigan Canal Commissioners, while insisting upon the sanitary district assuming the enormous burden of the contract, today submitted, have arrogantly rejected the request of the engineering committee that the use of the Sag feeder for this auxiliary channel should be ceded to the sanitary district as a partial consideration for the burden it is about to assume, and have likewise rejected the request of the sanitary district for the poor privilege of

crossing the Illinois and Michigan canal at the Sag, in the construction of this auxiliary channel from the Calumet to the main drainage channel."

From this it seems clear that the object of the sanitary district is to destroy navigation on the Summit Level of the Illinois and Michigan canal, in the expectation that the Legislature will finally cede to them the old Calumet feeder right-of-way for the purpose of constructing an auxiliary feeder to the sanitary district channel.

We are firmly of the opinion that the contract of December 21, 1899, will be sustained by the supreme court, and the sanitary district required to maintain a navigable depth of six (6) feet of water throughout the Summit Level. Should this contract, however, be held to be void, as they contend, it will be necessary for the State to provide water for the Summit Level for navigation purposes by the establishment of pumps at Bridgeport or by restoring the Calumet feeder.

The vested rights of the State in the old Calumet feeder are very valuable and we believe that no legislation should be enacted giving away these rights to the sanitary district of Chicago.

The litigation forced upon your board during the past four years has called attention to the careless manner in which the documents and records pertaining to the early history of the canal were cared for. Our inability to find valuable documents and references when wanted has been a source of serious embarrassment. Documents that ought to have been on file among the canal records, were found at Springfield, others among the rubbish of the attic, and others in unexpected places. To remove this embarrassment, we have caused to be compiled for publication, what may be termed a documentary history of the canal, comprising reports of the early commissioners and engineers from 1822 to 1848 (many of them never before published) and other documents relating to the canal and its feeders; documents and records pertaining to the ninety-foot reserve along portions of the south branch of the Chicago river, all laws, charters, ordinances and other information obtainable from 1830 to 1856, relating to the canal commissioner's sub-division of the south half of section 9, township 39 north, range 14 east of the 3rd P. M. (original Chicago), and the vacant space left by the canal commissioners of 1830 for public use along the margin of the Chicago river in this sub division, together with records of a later date showing the encroachment upon the State property by railroad and telegraph corporations and abutting property owners. Attention has been recently called to the valuable rights in what is termed the old towpath along the Chicago river, and the strip along the margin of the river between Madison and State streets, Chicago, now occupied as private property and known as wharfing privileges. We can find no records showing that the title of the State to this valuable property has been conveyed by the canal commissioners, trustees, or other authority.

We give herewith a tabulated statement of receipts and expenditures, together with the report of our superintendent, report of the treasurer, and a valuable and comprehensive report relative to canal lands from the opening of the canal to the present time.

Respectfully submitted,

C. E. SNIVELY,
HOWARD O. HILTON,
HOMER J. TICE,

Commissioners.

LOCKPORT, ILL., December 1, 1900.

NOTE.—Since the above report was prepared, Judge Dunne has rendered his decision in this case which decision sustains and confirms the Canal Commissioners in every point for which they contended. It is as follows:

STATE OF ILLINOIS, } ss.
COUNTY OF COOK. }

In the Circuit Court of Cook County, in Chancery.

THE CANAL COMMISSIONERS. }
vs. }
THE SANITARY DISTRICT OF CHICAGO. }

OPINION

In the above entitled cause delivered by Hon. Edward F. Dunne, December 24, 1900.

On, or about the 21st day of December, 1899, the complainants in the case at bar, The Canal Commissioners of the State of Illinois, entered into a written agreement with the defendant, The Sanitary District of Chicago, from which the Court quotes the following language:

“WHEREAS, It is claimed by The Canal Commissioners that the Sanitary District of Chicago has no authority in law to impair the usefulness of the Illinois and Michigan Canal; and,

“WHEREAS, It is further claimed by the said, The Canal Commissioners, that the opening of the main channel of The Sanitary District of Chicago, and the turning in of the water from Lake Michigan into said main channel will impair, if not destroy, navigation in said Illinois and Michigan Canal; and,

“WHEREAS, The claims aforesaid are not conceded by The Sanitary District of Chicago; and,

“WHEREAS, The parties hereto are willing to adjust and compromise the aforesaid differences existing between them, and particularly the claims of the said, The Canal Commissioners, as set forth in the information in a certain cause now pending in the Circuit Court of the United States in and for the Northern District of Illinois, wherein The People of the State of Illinois, by E. C. Akin, their Attorney General, are complainants, and The Sanitary District of Chicago is respondent, and the claims of The Sanitary District of Chicago, as set forth in its answer and cross-bill filed in said cause, which claims are not conceded by the Canal Commissioners; and,

“WHEREAS, The said parties hereto, after due and careful consideration of the premises, state that they have the power, under the laws of the State of Illinois, to enter into and perform the conditions and covenants herein set forth

“Now, Therefore, it is Agreed, By the Sanitary District of Chicago, party of the first part, and The Canal Commissioners, party of the second part, for the purpose of adjusting and compromising the pending differences existing between said parties, as above set forth, and for the further consideration of one dollar (\$1.00) by each to the other paid,

"1. That The Sanitary District of Chicago will, for a period of four (4) months after the opening of its main channel and the turning of the water into said channel, supply the Summit Level of the Illinois and Michigan canal with a volume of water equal to the average volume of water which has been supplied to said Illinois and Michigan canal by the pumps at Bridgeport for the year 1899, which shall not be less, however, than 35,000 cubic feet per minute.

"2. That The Sanitary District of Chicago will lower the lock at the junction of the Illinois and Michigan canal with the south branch of the Chicago river so as to maintain a depth of six and one-half (6½) feet of water over the mitre sills of said lock. This is to be done prior to April 1, 1900.

"3. It is further agreed that, after the expiration of the period of four (4) months herein above mentioned, the Sanitary district of Chicago will maintain throughout the Summit Level of said Illinois and Michigan canal a navigable depth of six (6) feet of water. The volume of water to be supplied for the purpose of maintaining this navigable depth of six (6) feet shall be determined by the needs of navigation only; and the said Sanitary District of Chicago shall not be required to furnish, at any time, water for water power or water power development."

Section 4 provides, that The Sanitary District of Chicago, at its option, may excavate the Summit Level of the canal to such a depth as may be necessary to secure the said depth of six (6) feet of water, should The Sanitary District deem that method to be more economical than pumping.

There are several other sections in said contract, the contents of which are unnecessary here to note, save and except section 6, in which The Canal Commissioners agree, in consideration of the agreements of The Sanitary District of Chicago, that they will not "object to or seek to prevent The Sanitary District of Chicago from turning the water of its main channel into the upper basin of the Illinois and Michigan canal prior to the completion of the work required to be executed and performed by said Sanitary District of Chicago under and by virtue of the decree of the circuit court of Will county, entered at the November term thereof."

Pursuant to the terms of this written agreement The Sanitary District of Chicago has performed and carried out the covenants contained in sections 1 and 2 of the contract, and has been engaged ever since the opening of the Sanitary District channel in pumping from the Chicago river at the Bridgeport pumps, into the channel of the canal, sufficient water to maintain a depth of six (6) feet in the old canal.

On or about November 1st, 1900, The Sanitary District of Chicago reached the conclusion, upon advice of counsel, that this contract, in so far as it compelled the Sanitary District to maintain a depth of six (6) feet of water in the Illinois and Michigan canal, was *ultra vires*, and, therefore, null and void, and on that day it served a notice upon the Canal Commissioners that on the 15th of the month it would repudiate the agreement and stop the pumping works at Bridgeport.

Upon receiving such notice the complainant filed its bill in chancery, asking for an injunction restraining the shutting down of said pumping works, and praying, in substance, for a specific performance of the contract.

The defendant has filed its answer and the cause has been heard, by agreement of both parties, upon the bill, answer, and evidence taken and considered in this court. Pending the trial the parties stipulated that the *status quo* shall be preserved.

It is contended by the defendant, first, that the contract in question was procured from it by "duress" and unlawful methods. The circumstances surrounding the execution of the contract, which it claims amounts, in law, to "duress" are as follows:

Careful computations made by competent civil engineers, prior to the opening of the drainage channel, disclosed the fact that the turning of the waters of Lake Michigan through the south branch of Chicago river into the drainage channel would lower the level of the water in the south branch of the

Chicago River where it connects with the Illinois and Michiran canal, from two (2) to two and one half (2½) feet. These computations and calculations, made prior to the opening of the channel, have been demonstrated, by actual tests and measurements, since the opening of the channel, and found substantially accurate. The effect of this would be to lessen the supply of water theretofore furnished from the Chicago river to the canal, and to lower the water of the Summit Level of the canal so much as to render it unnavigable.

The sanitary district having reached a point in the construction of the drainage channel where it deemed it timely to call upon the Governor to appoint a commission to examine the drainage channel pursuant to the law creating the sanitary district, had made such application to the Governor and said commission had been appointed and was then engaged in the examination of the drainage channel to ascertain whether or not it had been constructed in compliance with the law, and whether the Governor should give his consent, pursuant to the terms of the drainage act, to the turning into the channel of the drainage district of the waters of Lake Michigan.

The canal commissioners having ascertained that the effect of turning in this water would be to reduce their supply of water, as aforesaid, had applied to the Attorney General of this State and induced him to file a bill for and on their behalf, restraining the turning in of said water, until some provision was made by the sanitary district of Chicago to preserve the navigability of the Summit Level of the canal.

The canal commissioners had also appealed to the Governor of this State and, according to the evidence in this case, had succeeded in convincing him that the navigability of the Summit Level of the canal would be imperiled by the turning of the water of Lake Michigan into the drainage channel, and had induced the Governor to declare in substance, that he would not issue a permit to the sanitary district to turn the waters of Lake Michigan into the drainage channel until steps were taken by the sanitary district to preserve the navigability of the Summit Level of the canal.

The evidence in the case shows that the drainage channel was not in fact wholly completed, that all the requirements of the Legislature had not been complied with, but that it had reached such a stage of construction that it would be reasonably safe to turn in the waters of the Lake.

The commission appointed by the Governor to inspect the drainage channel had not completed its reports and had made no recommendation to the Governor. The city of St. Louis at the time either had in preparation, or had actually prepared, a bill in chancery, addressed to the supreme court of the United States praying that tribunal to enjoin the sanitary district of Chicago from turning in the water.

At this juncture with \$32,000,000 dollars expended upon the project, the sanitary district claims that it became absolutely necessary to have the water turned in at once, and that the only man in the State who had the right to give them permission so to do, influenced by the canal commissioners, declared flat-footed that no such permit should be given until the navigability of the Summit Level of the old canal should be guaranteed, and that, under these circumstances, they were compelled to and did enter into the contract in question, and succeeded in having the water turned into the drainage channel only a few minutes before the bill in chancery for injunction was filed by the city of St. Louis in the supreme court of the United States.

Does the action of the Governor in refusing the permit under these circumstances, and of the Attorney General of the State in filing his bill of injunction against the sanitary district, amount to "duress" in law?

Counsel for defendant urge this proposition in argument, but have cited no authorities which convince this court that their contention is sound.

The Governor was strictly within his legal rights in refusing this permit, if he believed or had good reason to believe, that he was protecting the interests of the State of Illinois.

The Illinois and Michigan canal is the property of the State. It was built many years ago, for and on behalf of the State, and has been officered and managed by the State for upwards of half a century. It is true, as disclosed

by the evidence in this case, that traffic upon this canal has depreciated tremendously in later years, and that it is probably at the present time a losing investment to the State, but until the State, through its Legislature, concludes to close up or abandon the same, it is the duty of the commissioners appointed by the State to manage and control it, and of the Governor himself, to do what lies in their power towards preserving it as a navigable body of water.

The Legislature has not seen fit to act in the way of abolishing or closing up the canal. It may be that it has found that the very existence of the canal, even though it be but poorly patronized, succeeds in keeping down for the people of the State, transportation rates on railroads running through that section of the State. Whatever be the reason, the Legislature has taken no steps to close up or abolish the canal.

As with the Governor and the Canal Commissioners, so it is with the Attorney General. If he believed, and had good reason to believe, that the usefulness of the canal would be imperiled by turning the waters of Lake Michigan into the drainage channel, it was his duty to protect by all lawful methods, such as the filing of a bill in chancery, the rights and powers of the Canal Commissioners.

There is no evidence in the record that either the Governor, the Canal Commissioners, or the Attorney General acted from corrupt or dishonest motives.

It is contended that they were influenced by their desire to keep certain employes at work on the canal. If the laws of the State, however, provide for the employment of these men in the running of the canal, that was not an illegal motive.

This court has nothing to do with the advisability or inadvisability of keeping the Illinois and Michigan canal open. That is for the Legislature and the Legislature alone.

This court can not hold that the action of the Governor, the Canal Commissioners, or the Attorney General amounted to legal "duress."

It is further contended by counsel for the defendant, that the contract is such a contract as is not authorized by the terms of the act creating the sanitary district; that in making this contract the trustees of the sanitary district exceeded their powers and traveled outside of their jurisdiction, and that the contract, therefore, is null and void.

In other words, they contend that it is not part of the business of the sanitary district of Chicago to operate in whole, or in part, the Illinois and Michigan canal, and that it is diverting the moneys belonging to the district to the use of the canal, contrary to law.

It is true that the sanitary district was created solely and exclusively for the purpose of providing a great sanitary channel for, substantially, the city of Chicago. It was not created for the purpose of pumping and giving away water to other corporations, and if the question of the impairment of the usefulness of the old canal by the construction and operation of the new sanitary channel, was not involved in the case, the contract would be undoubtedly *ultra vires*.

It is contended by counsel for the complainant, however, that the construction of the drainage channel and the turning into it of the water from Lake Michigan, which had theretofore been available to the old canal, directly damaged and impaired the usefulness of the canal. and that because of that fact the Canal Commissioners, representing the State, have the same right as any private individual, or any other municipality, to protest against the damage to or destruction of its property by the sanitary district, without compensation or the adoption of measures which might be taken to obviate or lessen said damage.

It would seem as if there was some force in this contention. The law creating the sanitary district does not give it *carte blanche* to take or damage private or public property.

The act creating the sanitary district of Chicago has several provisions restricting its right to take or damage private or public property. Section 17 of the Sanitary act provides:

"When it shall be necessary in making any improvements, * * * to enter upon any public property, or property held for public use, such district shall have the power so to do and may acquire the necessary right-of-way over such property held for public use in the same manner as is above provided for acquiring private property, and may enter upon, use, widen, deepen and improve any navigable or other waters, waterways, canal or lake: *Provided, the public use thereof shall not be unnecessarily interrupted, and that the same shall be restored to its former usefulness as soon as practicable.*"

Section 18 provided that "In making any special assessment for any improvement which requires the taking or damaging of property, the cost of acquiring the right to damage or take such property may be estimated and included in the assessment as a part of the cost of making such improvement."

Section 19 provides that "Every sanitary district shall be liable for all damages to real estate within or without such district which shall be overflowed or otherwise damaged by reason of the construction, enlargement or use of any channel, ditch, drain, outlet or other improvement under the provisions of this act."

Can it be doubted that if in fact the turning of the waters of Lake Michigan into the drainage channel would have destroyed or injured the navigability of the Summit Level of the canal, that the canal commissioners would have had the right, under section 17, to insist that the Sanitary District should restore the Illinois and Michigan canal "to its former usefulness as soon as practicable?"

Even if that clause of section 17 were not in the act, can it be doubted that if the sanitary district had impaired the navigability of the Illinois and Michigan canal, it would have been liable, under section 19 "for damages to real estate" under the control of the canal commissioners, which was damaged by reason of the construction, enlargement or use of the drainage channel?

It was contended by the canal commissioners, in their negotiations with the sanitary district, and shown in the evidence, that the navigability of the Summit Level of the canal would be impaired, if not destroyed, and that they had a right to prevent, by injunction in a court of equity in the name of the Attorney General, the consummation of such destruction.

Such, it would appear, were the views held by the Governor, when he refused to issue the permit until some provisions were made to insure the navigability of the canal.

Not only were these contentions pressed by the canal commissioners, the Governor and the Attorney General, but they were expressly recognized in the contract between the Canal Commissioners and the Sanitary District.

The preamble of the contract is a solemn recognition by the Sanitary District of these claims and contentions. That preamble reads as follows:

"WHEREAS, It is claimed by The Canal Commissioners that The Sanitary District of Chicago *has no authority in law to impair the usefulness of the Illinois and Michigan Canal*; and,

"WHEREAS, It is further claimed by the said, The Canal Commissioners, that the opening of the main channel of the Sanitary District of Chicago, *and the turning in of the water from Lake Michigan into said main channel will impair, if not destroy, navigation in said Illinois and Michigan canal*; and

"WHEREAS, The parties hereto are willing to adjust and compromise the aforesaid differences existing between them, and particularly the claims of the said, The Canal Commissioners, as set forth in the information in a certain cause now pending in the Circuit Court of the United States."

After these solemn recitals in the preamble, the following solemn declaration is made by the above parties:

"WHEREAS, The said parties hereto, after due and careful consideration of the premises, state that *they have the power, under the laws of the State of Illinois, to enter into and perform the conditions and covenants herein set forth.*"

Could more lucid or emphatic language be used than is set forth in these recitals in the preamble?

The contentions of the canal commissioners were not only strenuously and emphatically urged before the making of the contract, but distinctly and solemnly recognized by the Sanitary District in the terms of the contract itself.

The evidence in this case discloses that the canal would have been injured by turning in the waters of Lake Michigan into the drainage channel, and that because of that fact the Sanitary District could not have obtained the permit to turn such waters into said channel, unless it had made the contract in question.

Under those circumstances can it be said that in making the contract under which the Sanitary District preserved if it did not restore "the former usefulness" of the canal, it was acting *ultra vires*?

In making such a contract was the Sanitary District doing anything but recognizing its liability for all damages to real estate within or without such district, which shall be overflowed, or otherwise damaged by reason of the construction, enlargement or use of its channel, as set out in section 19 of the Sanitary District act?

It was in making this contract recognizing its liability for damages as provided in sections 17 and 19 of the Sanitary District act, and doing what lay in its power to lessen such damage. If by this contract it accomplished this result, can it be said to have acted *ultra vires*?

The Sanitary District was empowered to open its channel only when it had complied with all the requirements of the law. The law required the Governor's permission. The Governor's permission was refused because of the damage which would result to the canal. Was it not then within the scope of the power of the trustees of the Sanitary District to remove these obstacles to the completion of their work by doing what the Sanitary District act, in section 17, says they were required to do, to-wit: "To restore (the canal) to its former usefulness as soon as practicable?"

Can they be heard in a court of equity to say that they should have first destroyed the navigability of the canal and then have "restored it to its former usefulness as soon as practicable," when by the making of the contract in question they obviated that destruction and relieved themselves from all damages which would have resulted in the turning of the water from Lake Michigan into the drainage channel, when it would have been finally opened?

If the canal would have been damaged, as the evidence beyond question shows it would have been, and if the Sanitary District could have been compelled to either "restore the canal to its former usefulness as soon as practicable," or to have paid for damages resulting to the canal from the opening of the drainage channel, the drainage trustees in good conscience and in the exercise of sound judgment as business men, were, in the judgment of this court, under the provisions of the Sanitary District act justified in making the contract in question, which gives them the right to either maintain the water at a depth of six (6) feet by pumping, or by excavating the old canal to a sufficient depth to preserve a depth of six feet of water at all times therein.

It may be that the old canal has outlived its usefulness—it may be that it is kept open for the purpose of furnishing offices and supplying patronage, but if the Legislature has so willed, a court of equity has no concern with such changes or intimations.

The Legislature of the State, by law, declares that the canal shall be kept open and operated. Until the Legislature decides otherwise no court has the right to interfere with its functions, and by refusing its aid to the canal com-

missioners for the purpose of enforcing a lawful contract entered into advisedly, accomplish the destruction of that which the Legislature has declared shall be preserved and used for the benefit of the people of the State.

That it is egregious folly and a wanton waste of money to maintain and operate the old canal alongside of and parallel to the greater and newer channel if engineering skill can connect the latter at or about Lockport with the old canal below that point, no one will gainsay; but a court has no power to make law. Its sole right and duty is to construe it.

It is, however, contended by counsel for the defendant that even though the contract be a valid one, that this court should not and can not enter an order in accordance with the prayer of the bill, for the reason that it would be in effect entering a decree compelling the specific performance of the contract which calls for a succession of acts whose performance can not be consummated by one transaction, and which will require protracted supervision and direction.

In support of this contention counsel for defendant cites a large number of authorities, among others, "Grape Creek Coal Company vs. Spellman, 39 App., 632; and Harley vs. Sanitary District of Chicago, 54 App., 339."

Without question the courts of chancery have held to this doctrine where the effect of a decree would be to compel one man to render continuous service for another which would, from time to time, require the supervision of the court and frequent orders therein to carry out the court's decree.

They have also so held as between private corporations on the theory that a court of equity will not assume what it can not practically accomplish.

There are, however, exceptions to the rule. Theatrical contracts have been negatively enforced by injunctions restraining actors from performing in other theatres than those in which they have contracted to perform.

Kennicott v. Leavitt, 37 Ill. App. 435.
High on Injunctions, 1164.

In cases of railroads courts of chancery have entertained jurisdiction for the purpose of compelling the operation of a railroad, although in its nature it would require the performance of continuous transactions.

Counsel have not cited any case stating this doctrine as between municipal corporations.

The case at bar, in the court's judgment, furnishes another exception to this rule.

All the authorities hold that a bill for the specific performance of a contract is addressed to the sound legal discretion of the court.

C., B. & Q. R. R. Co. v. Reno, 113 Ill. 44.
East St. Louis Ry. Co. v. East St. Louis, 182 Ill. 438.
Hetfield v. Willey, 105 Ill. 290.

In Pomeroy's Equity Jurisprudence (Sec. 1341), the doctrine is laid down as a general proposition that "whenever the contract is one of a class which will be affirmatively specifically enforced, a court of equity will restrain a breach by injunction if this is the only practical mode of enforcement which its term permits."

In East St. Louis Ry. Co. v. East St. Louis, 182 Ill. 438, the court declares a bill "for specific performance of the contract is addressed to the sound discretion of the court, and that relief will not be granted as a matter of course, although a legal contract may be shown to exist. It will not be granted where it would be inequitable to do so, nor where to do so would *interfere with public interests*."

The converse of this proposition ought also to be true. Relief should not be denied where to do so would "interfere with public interests."

Let us examine the case at bar. Would not the refusal of the relief prayed for in this bill interfere seriously with "public interests?"

The court is of the opinion that both under the law creating the Sanitary District and under the contract, the defendant corporation, if it injured the canal, would be liable for all damages occasioned thereby. The Illinois and Michigan canal has cost the State millions of dollars. If the defendant is allowed to repudiate this contract the zealous counsel for the complainant will inevitably bring suit for damages against the Drainage District. If the canal cost millions of dollars and is rendered useless as this court from the evidence believes it will be if the pumping works shut down, the result of this suit may be to burden the people of the Sanitary District with an enormous verdict for damages.

A suit involving so much money would necessitate the hiring of counsel for the canal commissioners; the employment of engineers, assistant engineers, and all the concomitant train of linemen, surveyors, etc. The drainage district, if sued, would be compelled to use both their attorneys and their corporation counsel, their staff of engineers, surveyors, linemen, *et hoc genus omne*. Real estate experts, whose services are always costly, would be called in on both sides of this litigation.

The exercise of common sense upon the bench is not incompatible with the performance of equity. Ought this court, sitting as a chancellor, and believing as it does, that the shutting up of the Illinois and Michigan canal will entail heavy damages upon the sanitary district, take such action as will inevitably bring about a suit for millions of dollars, brought by the canal commissioners against the sanitary district?

Ought it not to preserve the present *status quo*, the result of a deliberately executed contract, even though it cost the sanitary district at the rate of \$100 a day, until the Legislature, in the exercise of legislative wisdom and common sense, can pass some legislation that will obviate the present awkward situation?

Believing that the denial of the prayer of this bill would entail upon the people of the sanitary district liability which might be enormous, and believing that the denial of the relief would interfere most seriously with "public interests" and with the rights of the taxpayers of this district, this court declares that the prayer of the bill in this case should be granted, and it is so ordered.

STATEMENT

Showing amount of receipts and disbursements on account of the Illinois and Michigan canal and locks in the Illinois river at Henry and Copperas Creek, from December 1, 1899, to November 30, 1900, inclusive.

Balance on hand December 1, 1899, (per Commissioners' report)		\$40,242 52
RECEIPTS.		
ILLINOIS AND MICHIGAN CANAL.		
Receipts from all sources, to-wit—		
Tolls, "A"	\$13,867 93	
Sale of lots, land and vacated street ends, "B"	1,665 00	
Leases of 90-foot strip and lots, "C"	6,141 00	
Miscellaneous receipts, credited to extraordinary expenditures, "D"	34,792 17	
Water power leases, "E"	4,704 87	
Ice leases, "F"	767 00	
Miscellaneous, "G"	1,670 50	
Rental of old boats, machinery, etc.; sale of old material, freights deducted, etc., "H"	3,098 43	
ILLINOIS RIVER.		
Lockage at Henry, "I"	821 36	
Lockage at Copperas Creek, "J"	1,751 15	
		69,279 41
DISBURSEMENTS.		\$109,521 93
ILLINOIS AND MICHIGAN CANAL.		
Total disbursements, to-wit—		
Maintenance and repairs, "K"	\$31,205 81	
Charged to tolls and rents, "L"	15,624 38	
Charged to canal property, "M"	1,567 57	
Charged to extraordinary expenditures, "N"	36,805 87	
ILLINOIS RIVER.		
Lockage at Henry, "O"	1,294 89	
Lockage at Copperas Creek, "P"	1,819 08	
		88,317 00
Balance on hand December 1, 1900.		\$21,204 33

NOTE—The above balance is on deposit to the credit of Homer J. Tice, Treasurer of the Board of Canal Commissioners, in the Central National Bank of Peoria, except \$200.00, which is in the hands of the Collector at Chicago, for emergency use.

For details see tables marked respectively, "A," "B," "C," "D," "E," "F," "G," "H," "I," "J," "K," "L," "M," "N," "O" and "P."

"A."

TOLLS ON CANAL.

Date.	Receipt Number.	Name of Collector.	Where Collected.	Amount.
1899.				
Dec. 31	8	James Barron	Chicago	\$362 44
31	9	W. L. Sackett	Lockport	116 82
1900.				
January 31	40	James Barron	Chicago	54 94
31	41	W. L. Sackett	Lockport	50 33
April 30	72	W. L. Sackett	Lockport	12 95
30	73	John O'Donnell	Ottawa	33 76
May 31	82	James Barron	Chicago	303 92
31	83	W. L. Sackett	Lockport	853 50
31	84	John O'Donnell	Ottawa	30 55
31	85	Lee R. Kinnear	Henry	2 88
31	86	George Woodruff	Copperas Creek	2 88
June 30	95	James Barron	Chicago	558 86
30	96	W. L. Sackett	Lockport	843 19
30	97	John O'Donnell	Ottawa	373 93
July 31	109	James Barron	Chicago	655 36
31	110	W. L. Sackett	Lockport	1,011 83
31	111	John O'Donnell	Ottawa	346 36
Aug. 31	116	James Barron	Chicago	557 65
31	117	W. L. Sackett	Lockport	753 10
31	118	John O'Donnell	Ottawa	251 74
31	119	Lee R. Kinnear	Henry	1 67
Sept. 30	134	James Barron	Chicago	866 51
30	135	W. L. Sackett	Lockport	1,291 40
30	136	John O'Donnell	Ottawa	429 89
Oct. 31	145	James Barron	Chicago	980 42
31	146	W. L. Sackett	Lockport	1,473 17
31	147	John O'Donnell	Ottawa	524 56
31	148	Lee R. Kinnear	Henry	39 60
Nov. 30	157	James Barron	Chicago	552 17
30	158	W. L. Sackett	Lockport	463 33
30	159	John O'Donnell	Ottawa	63 53
30	160	Lee R. Kinnear	Henry	4 68
		Total		\$13,867 93

"B."

RECEIVED FROM SALE OF CANAL LANDS, CONSISTING OF VACATED STREETS AND LOTS OCCUPIED BY SQUATTERS.

Date.	Abstract No.	Name.	From what Received and Description.	Amount.
1900.				
Jan. 10	19	Charles Wiles	S. $\frac{1}{2}$ Lot 5, Blk 1, and Lot 6, Blk 1, West Joliet	\$425 00
	20	Christopher J. Smith	S. 3 ft. of Lots 1 and 2, Blk 3, Richmond & Raynor's Sub. of Blks 40, 41, 42, 43, 44 and 45, C. T. Sub. W. $\frac{1}{2}$ Sec. 9, T. 35 N., R. 10, Joliet	10 00
	21	Michael Wiles	N. $\frac{1}{2}$ Lot 5, Blk 1, West Joliet	150 00
	22	William Callighan	N. $\frac{1}{2}$ Lot 5, Blk 1, West Joliet	
	23	Herman Achlien	S. 33 ft. more or less, Lots 30 and 31 of S. W. Bowen's Sub. of parts of Blks 32 and 33, C. T. Sub. of W. $\frac{1}{2}$ Sec. 15, T. 35 N., R. 10, Joliet	35 00
	24	Patrick Norton	S. $\frac{1}{2}$ Lot 4, Blk 1, Joliet	40 00
	25	Margaret Norton	N. $\frac{1}{2}$ Lot 4, Blk 1, Joliet	150 00
				150 00

"B"—Continued.

Date.	Ab- stract No.	Name.	From what Received and Description.	Amount.
1900 Jan. 10	26	Mrs. Loretta Pinnoe.....	S 33 ft. more or less of Lot 34 of S. W. Bowen's Sub. of parts of Blks 32 and 33 C. T. Sub. of W. ½ Sec. 15 T. 35 N. R. 10, Joliet.....	\$20 00
	27	Mary Bourke.....	S 33 ft. Lot 5, Blk 38 of Henry Strickland's Sub. of Blks 37, 38 and 39 of C. T. Sub. of W. ½ Sec. 9 T. 35 N. R. 10, Joliet.....	20 00
	28	Margaret Harris.....	S. 33 ft. Lot 2, Blk 38 of Henry Strickland's Sub. of Blks. 37, 38 and 39 of C. T. Sub. of W. ½ 9, 35, 10, Joliet...	20 00
	29	Louis Pritchard.....	S. 33 ft. of Lot 3, Blk 38 of Henry Strickland's Sub. of Blks 37, 38, 39 C. T. Sub. of W. ½ 9, 35, 10, Joliet...	20 00
	30	Catherine Tyrell.....	S. 3 ft. of Lot 2, Blk 4, Richmond & Raynor's Sub. of Blks 40, 41, 42, 43, 44, 45 C. T. Sub. W. ½ 9, 35, 10, Joliet.....	5 00
	31	Anna Simons and Frank Simons.....	Blk 9 C. A. Strong's Sub. of pt. of N. ½ of S. W. ¼ of 9, 35, 10, Joliet.....	150 00
	32	Wilhelmena Sophia Larson.....	S. 3 ft. Lot 1, Blk 4, Richmond & Raynor's Sub. of Blks 40, 41, 42, 43, 44, 45 C. T. Sub. of W. ½ 9, 35, 10, Joliet.....	5 00
Sept. 5	122	Annie Pesdirz.....	For that portion of a strip of land lying east of Lots 3 and 4, Blk 39, North Joliet.....	20 00
	123	Luke Gavigan.....	For that portion of a strip of land lying east of lot 5, Blk 39, North Joliet.....	15 00
Sept. 10	124	Mutual Loan & Bldg. Association.....	For Lot 7, Blk 1, W. Joliet.....	200 00
	125	Sebastian Lager.....	Lot 11, Blk 1, W. Joliet.....	80 00
	126	John F. Bray.....	For Lot 5, John Belz's Sub. of Lots 9 and 10 and the So. 15 ft. of Lot 8, Blk 1, West Joliet.....	50 00
	127	Sheldon D. Knowlton....	Blk 51, Old Town of Du Page.....	100 00
		Total		\$1,665 00

"C."

LEASES OF "NINETY FOOT STRIP" AND LOTS.

Date.	Number of Receipt.	Name of Lessee.	Location.	Amount.
1899 Dec. 13	5	John Liker	Joliet.....	\$5 00
26	7	Carrington, Hannah & Co	Chicago.....	1,250 00
1900 Jan. 11	33	John B. Allison.....	Lemont.....	20 00
Feb. 6	44	Ottawa Developm't Ass'n	Ottawa (in part).....	180 00
6	45	Field Electric Light Co.	Morris.....	6 00
12	47	W. D. Leser.....	Ottawa.....	1 00
March 22	56	Repauno Chemical Co....	Romeo.....	10 00
22	57	J. G. Bodenschatz.....	Lemont.....	25 00
28	58	W. R. Stubbs.....	Willow Springs.....	25 00
April 4	59	S. J. Howe for E.N. Davis	Chicago (part payment).....	100 00
10	61	Russell & Cavanaugh....	Utica.....	75 00
24	62	Mary Sheehan.....	Bridgeport.....	100 00
27	63	Albert T. Randall.....	Channahon.....	21 00
30	70	Chicago Strawboard Co.	Morris.....	100 00
May 30	71	John Schroeder.....	Morris.....	5 00
25	79	Peter Ring.....	Willow Springs.....	15 00
June 8	87	Chicago & Alton Ry. Co.	Chicago.....	100 00

Leases of "Ninety Foot Strip" and Lots—Concluded.

Date.	Number of Receipt.	Name of Lessee.	Location.	Amount.
July	9	101 Carrington, Hannah & Co	Chicago.....	\$1,250 00
10	102	E. F. Pulsifer	Utica.....	50 00
16	106	Illinois Steel Co.....	Joliet.....	500 00
16	106	Emery N. Davis.....	Chicago (part payment).....	400 00
31	108	J. F. Kilduff (two leases)	LaSalle.....	150 00
Aug.	7	114 George Woodruff	Copperas Creek.....	50 00
20	115	Ottawa Developm't As'n	Ottawa.....	1,020 00
Sept.	5	121 Houck & Brown.....	Joliet.....	100 00
17	128	Robert Schofield.....	Morris.....	3 00
18	129	Chicago & Alton Ry.....	Corwith.....	25 00
25	131	John Liker.....	Joliet.....	5 00
31	132	George M. Campbell.....	Romeo.....	50 00
Oct.	141	Norton & Co.....	Lockport.....	190 00
142		Norton & Co.....	Lockport.....	10 00
143		H. S. Norton	Lemont.....	300 00
Total				\$6,141 00

"D."

CREDITED TO EXTRAORDINARY EXPENDITURES.

Date.	Number of Receipt.	Name of Lessee.	Location.	Amount.
1899				
Dec.	20	6 Sanitary Dist., Chicago..	Inspectors for November.....	\$552 00
1900				
Jan.	8	12 Lincoln & Stead.....	Amount returned with voucher, No 760, because same did not "apply on account" instead of for specific items.....	550 00
"	24	37 Sanitary Dist., Chicago..	Bill of Hunt & Co. Cement tests, inspectors, Dec. Use flat boat... Use dredge, repair boat No. 1 and crew, etc., November.....	993 00
Feb.	9	46 Sanitary Dist., Chicago..	Dredge Dec. Inspector Felt, Nov. and Dec.....	2,863 47
"	26	50 Sanitary Dist., Chicago..	Use repair boat and crew, December—Joliet.....	2,084 00
"	26	51 Sanitary Dist., Chicago..	Bill, R. W. Hunt & Co., cement tests, Joliet; Oct., Nov., Dec., 1899, and January, 1900.....	287 50
"	26	53 Sanitary Dist., Chicago..	Use of dredge and repair boat, January.....	631 92
Mar.	15	54 Sanitary Dist., Chicago..	Use of dredge and repair boat, January.....	4,296 50
"	31	60 F. K. Whittemore, State Treasurer	From contingent appropriation for emergency legal services.....	6,050 00
April	24	64 Sanitary Dist., Chicago..	Salary Joliet inspectors, Jan., 1900.....	452 88
"	24	66 Sanitary Dist., Chicago..	Salary Joliet inspectors, Feb., 1900.....	243 50
"	24	67 Sanitary Dist., Chicago..	Use dredge February, 1900.....	1,867 00
"	24	68 Sanitary Dist., Chicago..	Use repair boat and crew February, 1900.....	728 00
May	18	77 Sanitary Dist., Chicago..	Payment of Inspector and repair boat and crew, March.....	575 00
"	26	80 F. K. Whittemore, State Treasurer	From contingent appropriation for payment "River Dam Litigation" Bridgeport lock gates and dredge, May.....	5,000 00
July	16	107 Sanitary Dist., Chicago..	Payment April dredge bill.....	3,284 80
Oct.	31	144 Sanitary Dist., Chicago..	Use of dredge March, 1900.....	2,160 00
Nov.	30	150 Sanitary Dist., Chicago..	For services, McDonald & Lintner, Sept., Oct., Joliet.....	1,823 00
"	30	162 Sanitary Dist., Chicago..	Payment flat boat destroyed.....	200 00
"	30	163 Sanitary Dist., Chicago..		150 00
Total				\$34,792 17

"E."

WATER POWER LEASES.

Date.	Number of Receipt.	Name of Lessee.	Location.	Amount.	
1900					
Jan.	8	13	David Oliver	Channahon Level.....	\$374 40
"	8	15	American Steel & Wire Co.....	Channahon Level.....	414 40
"	31	39	Norton & Co.....	Lockport	1,680 00
June	27	93	Ottawa Hydraulic Co...	Ottawa	375 00
July	10	103	David Oliver	Channahon Level.....	374 40
Sept.	30	133	Joliet Builders' Supply Co.....	Channahon Level, Sept.....	20 00
Oct.	22	139	Joliet Builders' Supply Co.....	Channahon Level, Oct	20 00
"	31	140	Norton & Co	Lockport ..	1,446 67
			Total		\$4,704 87

"F."

ICE LEASES.

Date.	Number of Receipt.	Name.	Location.	Amount.	
1899					
Dec.	11	1	C. C. Glover	Ottawa—Feeder	\$26 00
	11	2	Harry Foster	Morris	20 00
1900					
Jan.	8	14	McConnell & Son	Seneca.....	25 00
..	10	17	Callahan & Gaynor	LaSalle.....	125 00
..	15	34	W. D. Leser	Ottawa	45 00
..	29	38	B. G. Barratt	Ottawa (Poor Farm).....	20 00
Nov.	19	151	John Corrigan by Nellie Corrigan	LaSalle	20 00
..	19	152	Harry Foster.....	Morris	20 00
..	19	153	Chas. Reed	Channahon	10 00
..	19	154	B. G. Barratt, Supt.....	Ottawa	20 00
..	19	155	D. Sanderson	Ottawa—2 leases.....	186 00
..	19	156	C. C. Glover	Ottawa (part payment).....	250 00
Total.....					\$767 00

"G."

RECEIVED FROM MISCELLANEOUS SOURCES.

Date.	Number of Receipt.	Name.	For What Received.	Amount.
1899 Dec. 13	4	Heldmeir & New.....	Sand.....	\$54 00
1900 Jan. 10	18	City of Ottawa	Water.....	50 00
Feb. 12	48	Economy Light & Power Co.....	Use water—upper basin.....	687 50
May 14	75	G. A. Glasscock	Water pipe	18 50
28	81	F. D. Meyers	Water pipe	10 00
June 8	89	Robert McMillen.....	Water pipe.....	5 00
.. 8	90	City of LaSalle.....	Water rent	25 00
.. 8	91	Robert Cannon.....	Sprinkling privilege	15 00
27	94	Chas. Vaus	Water pipe.....	13 00
July 9	100	Robert Collier	Sprinkling privilege	15 00
Sept. 17	130	Economy Light & Power Co.....	Use water—upper basin.....	687 50
Nov. 30	164	W. L. Sackett	Certified copies	15 00
.. 30	165	G. E. Snively	For black horse.....	75 00
		Total		\$1,670 50

"H."

CHARGED TO MAINTENANCE AND REPAIRS.

Date.	Number of Receipt.	Name.	For What Received.	Amount.
1899 Dec. 12	3	Barron & Peace	Use of mud pump, etc., per contract	\$381 25
1900 Jan. 10	16	Sanitary Dist. Chicago..	Use engine Romeo—Nov	104 00
.. 19	35	Gahan & Byrne	Man at waste gates—Dec.....	62 00
.. 22	36	Thomas Phee.....	Sand Joliet Work.....	216 00
.. 24	37	Sanitary Dist. Chicago..	Use of flat boat	21 00
Feb. 26	49	Gahan & Byrne.....	Man at waste gates—Jan	62 00
.. 26	52	Sanitary Dist. Chicago..	Use hoisting engine Romeo—Dec ..	104 00
Mar. 20	55	Gahan & Byrne.....	Man at waste gates—Feb.....	56 00
Apr. 24	65	Sanitary Dist. Chicago..	Use hoisting engine—Jan. and Feb. 1900.....	200 00
.. 27	69	Gahan & Byrne	Man at waste gates below Joliet—March	62 00
May 14	76	Economy Light & Power Co.....	Sand in April	369 00
.. 18	78	Sanitary Dist. Chicago..	Use hoisting engine—March.....	109 00
June 8	88	Economy Light & Power Co.....	Sand in May.....	414 00
.. 19	92	Sanitary Dist. Chicago..	Use hoisting engine—April.....	100 00
July 10	104	Sanitary Dist. Chicago..	Use repair boat and crew and hoisting engine—May.....	271 25
Nov. 30	164	W. L. Sackett	For old material, coal to men, certified copies, freight deducted, etc..	567 93
		Total		\$3,098 43

"I."

LOCKAGE AT HENRY.

Date.	Receipt Number.	Name of Collector.	Where Collected.	Amount.
1899.				
Dec.	31	James Barron.....	Chicago.....	\$1 50
"	31	Lee R. Kinnear.....	Henry.....	21 93
1900.				
Jan.	31	Lee R. Kinnear.....	Henry.....	1 50
Apr.	30	Lee R. Kinnear.....	Henry.....	60 27
May	31	James Barron.....	Chicago.....	1 50
"	31	Lee R. Kinnear.....	Henry.....	67 04
"	31	George Woodruff.....	Copperas Creek.....	1 50
June	30	Lee R. Kinnear.....	Henry.....	94 98
"	30	George Woodruff.....	Copperas Creek.....	13 50
July	31	Lee R. Kinnear.....	Henry.....	99 64
Aug.	31	Lee R. Kinnear.....	Henry.....	127 76
"	31	George Woodruff.....	Copperas Creek.....	2 23
Sept.	30	James Barron.....	Chicago.....	10 50
"	30	Lee R. Kinnear.....	Henry.....	108 05
Oct.	31	James Barron.....	Chicago.....	3 00
"	31	John O'Donnell.....	Ottawa.....	5 35
"	31	Lee R. Kinnear.....	Henry.....	113 23
Nov.	30	James Barron.....	Chicago.....	3 00
"	30	John O'Donnell.....	Ottawa.....	1 50
"	30	Lee R. Kinnear.....	Henry.....	83 38
Total.....				\$321 36

"J."

LOCKAGE AT COPPERAS CREEK.

Date.	Receipt Number.	Name of Collector.	Where Collected.	Amount.
1899.				
Dec.	31	James Barron.....	Chicago.....	\$1 50
"	31	George Woodruff.....	Copperas Creek.....	25 67
1900.				
Jan.	31	George Woodruff.....	Copperas Creek.....	12 20
April	30	Lee R. Kinnear.....	Henry.....	44 31
May	31	James Barron.....	Chicago.....	1 50
"	31	George Woodruff.....	Copperas Creek.....	50 84
June	30	Lee R. Kinnear.....	Henry.....	1 50
"	30	George Woodruff.....	Copperas Creek.....	286 35
July	31	George Woodruff.....	Copperas Creek.....	279 10
Aug.	31	George Woodruff.....	Copperas Creek.....	415 72
Sept.	30	James Barron.....	Chicago.....	7 50
"	30	George Woodruff.....	Copperas Creek.....	306 55
Oct.	31	James Barron.....	Chicago.....	3 00
"	31	George Woodruff.....	Copperas Creek.....	198 68
Nov.	30	James Barron.....	Chicago.....	3 00
"	30	John O'Donnell.....	Ottawa.....	1 50
"	30	George Woodruff.....	Copperas Creek.....	112 23
Total.....				\$1,751 15

"K."

CHARGED TO MAINTENANCE AND REPAIRS.

Date.	No. of Vouch'r.	Name.	For What Expended.	Amount.
1899.				
Dec.	31	1 Leon McDonald.....	Pay roll for labor.....	\$208 33
		2 Wm. Keough.....	..	473 25
		3 Chas. Dimmick.....	..	369 72
		4 F. X. Werling.....	..	375 63
		5 ..	..	6 00
		6 Cameron, Amberg & Co.	Stationery.....	32 12
		7 Marsh & Bingham Co.	Lumber.....	31 00
		8 H. M. Hooker & Co.	Asphaltum.....	51 27
		9 W. H. Lanfear.....	Hay and oats.....	2 20
		10 C. W. Kipplinger, Agt.	Telegrams for December.....	2 20
		11 Henry Miller.....	Freight and cartage.....	14 00
		12 H. A. Kettering.....	Repairs and horseshoeing.....	37 50
		13 C. W. Kipplinger, Agt.	Freight on coal.....	2 23
		14 W. O. Clark.....	Laundry.....	11 51
		15 Village of Lockport.....	Water and electric light.....	2 00
		16 George T. Dowse.....	Repairing rubber boots.....	12 01
		17 John A. Walter.....	Postage and stamped envelopes.....	35 17
		18 Norton & Co.....	Lumber.....	9 38
		19 E. D. Howland.....	Glass, paint and oil.....	9 40
		20 Wm. Keough.....	Expense as foreman.....	25 25
		21 W. L. Sackett.....	Sundry bills and expense as C. C. & P. M.....	1 51
		22 M. Himrod.....	Express.....	14 48
		23 John R. Pitts.....	Straw, etc.....	2 84
		24 Strong, Bush & Hand- work.....	Repairs.....	31 51
		25 Wilcox Bros.....	Lumber.....	6 90
		26 Joliet Bridge & Iron Co.	Iron work.....	46 76
		27 Barrett Hardware Co.	Hardware.....	31 55
		28 Heggie Bros.....	Foundry work.....	14 35
		29 Humphrey & Son.....	Foundry work.....	5 70
		30 Robert Pilcher.....	Sacks for cement tests.....	8 90
		31 C. D. Ferguson.....	Blacksmithing.....	5 83
		32 P. R. Southcomb.....	Teams.....	15 63
		33 Carr & Spencer.....	Hay and straw.....	14 55
		34 John Haeblerlin.....	Hardware.....	4 50
		35 A. B. Bradish.....	Lumber.....	5 50
		36 F. X. Werling.....	Expense as foreman and sundry bills.....	135 56
		37 McGarr Bros.....	Horseshoeing.....	3 30
		38 Phillip Schoch.....	Blanket, repairs, etc.....	3 35
		39 LaSalle Co. Car Coal Co.	Coal.....	20 00
		40 E. O. Turk.....	Brooms and pails.....	20 00
		41 E. G. Formhals.....	Repairs on machinery.....	9 00
		42 Homer J. Tice.....	Expense as commissioner.....	37 35
		43 H. O. Hilton.....	Coal.....	17 00
		44 J. L. Snyderacker.....	Cement.....	20 00
		45 A. W. Hays.....	Sign letters Dayton water power gauges.....	5 48
		46 Wm. Sedgwick.....	Expense as commissioner.....	1 15
		47 C. E. Snively.....	Oil.....	13 10
		48 Standard Oil Co.....	Telegrams president's office.....	30 00
		49 Western U. Tel. Co.....	Blankets and harness repairs.....	61 06
		50 Joseph Steven.....	Expense as general supt.....	12 00
		51 Leon McDonald.....	Hay and oats.....	
		52 Smith Bros.....	4,000 pounds smithing coal.....	
		53 O. B. Benson.....		
1900.				
Jan.	31	76 Leon McDonald.....	Pay roll for labor.....	208 33
		77 Wm. Keough.....	..	349 68
		78 F. X. Werling.....	..	234 00
		79 Wyckoff, Seamans & Benedict.....	Typewriter supplies.....	6 85
		80 Jones & Laughlin.....	Steel.....	47 60
		81 H. G. Bachmann.....	Ice for 1899.....	19 40
		82 C. W. Kipplinger, Agt.	Freight on coal.....	18 75
		83 Norton & Co.....	Lumber, etc.....	22 06
		84 Henry Miller.....	Freight and cartage.....	3 11
		85 Chas. Dimmick.....	Railroad fares.....	15 40
		86 Wm. Wurbs.....	Harness repairs.....	1 15
		87 W. O. Clark.....	Laundry.....	2 00

"K"—Continued.

Date.	No. of Vouch'r.	Name.	For What Expended	Amount.
1900.				
Jan. 31	100	Wm. Keough.....	Expense as foreman	\$11 60
	101	W. L. Sackett.....	Expense of meetings, sundry bills.....	85 97
	103	M. Walter.....	Chimneys, salt, sundries	7 05
	104	Mrs. Thos. O'Brien.....	Drayage.....	1 00
	105	A. L. Gaines.....	Horse blanket, etc	3 18
	106	W. H. Lanfear.....	Hay and oats.....	34 50
	107	Village of Lockport.....	Light for January.....	3 50
	108	Leon McDonald.....	Expense as Gen. Supt.....	25 00
	110	Adams Bros.....	Hardware.....	18 46
	112	Joseph Stephen.....	Harness, repairs, etc.....	8 65
	113	Standard Oil Co.....	Oil.....	13 59
	114	Heggie Bros.....	Repairing.....	14 62
	115	Strong, Bush & Hand- werk.....	Plumbing.....	14 48
	116	Humphrey & Sons.....	Repairing.....	5 75
	117	Haviland & Stoddard.....	Feeding horses.....	4 50
	120	Bates Machine Co.....	Repairing.....	80
	121	Barrett Hardware Co.....	Hos., nails, etc.....	90 98
	123	F. X. Werling.....	Expense as foreman.....	13 13
	125	Robert Unzicker.....	Hay and oats.....	12 31
	126	Wm. Marlett.....	Horseshoeing.....	2 10
	127	Robert T. Herreck.....	Repairing pump.....	1 00
	132	John R. Pitts.....	Oats.....	37 25
	133	H. O. Hilton.....	Expense as commissioner.....	32 75
	134	Homer J. Tice.....	" " " ".....	25 00
	135	C. E. Snively.....	" " " ".....	45 50
	138	Lockport Phoenix.....	Envelopes for Treasurer.....	1 25
Feb. 28	139	Leon McDonald.....	Pay roll for labor.....	208 33
	140	Wm. Keough.....	" " " ".....	309 50
	143	F. X. Werling.....	" " " ".....	225 00
	144	W. H. Lanfear.....	Hay.....	25 70
	145	W. O. Clark.....	Laundry.....	98
	146	Wm. Keough.....	Expense as foreman.....	10 75
	147	Lockport Phoenix.....	Stationery.....	5 75
	148	Wm. Alford.....	Feeding teams.....	1 91
	149	H. A. Kettering.....	Blacksmithing.....	21 50
	150	Village of Lockport.....	Electric light, February.....	3 50
	154	W. L. Sackett.....	Money advanced and expense as C. C. & P. M.....	17 50
	155	Bates Machine Co.....	Repairs.....	58 50
	156	Joseph Stephen.....	Harness repairs.....	2 60
	157	Wilcox Bros.....	Lumber.....	15 98
	158	Heggie Bros.....	Rolling flues.....	1 25
	159	Strong, Bush & Hand- werk.....	Hardware.....	50
	160	Barrett Hardware Co.....	" " " ".....	57 84
	161	F. X. Werling.....	Expense as foreman.....	7 11
	162	Richard A. Smith.....	Hay.....	13 28
	163	W. B. Smith.....	Plastering office.....	3 50
	165	C. W. Kiplinger Ag't.....	Freight and express, February.....	23 39
	166	People's Telephone Co.....	Telephone, March, April, May.....	6 00
	169	Jones & Laughlin.....	Steel.....	18 58
	170	Greenview Coal & M. Co.....	Coal.....	29 15
	171	Homer J. Tice.....	Expense as commissioner.....	10 35
	172	C. E. Snively.....	" " " ".....	24 20
	173	Leon McDonald.....	Expense as Gen. Superintendent.....	45 65
	175	Howard O. Hilton.....	Expense as commissioner.....	25 00
March 31	177	Leon McDonald.....	Pay roll for labor.....	208 33
	178	Wm. Keough.....	" " " ".....	376 71
	180	Chas. Dimmick.....	" " " ".....	195 13
	181	Wm. Keough.....	Expense as foreman.....	13 20
	182	F. X. Werling.....	Pay roll for labor.....	462 37
	183	E. C. Smith.....	" " " ".....	270 25
	187	James Burron.....	Expense as collector.....	13 40
	189	Chas. S. Waterman.....	Railroad tickets, superintendent and assistant superintendent.....	13 00
	190	W. H. Lanfear.....	Hay.....	21 30
	191	Wm. Alford.....	Feed for teams.....	6 14
	192	George T. Dowse.....	For rubber glove and expense.....	7 00
	193	John M. Walter, P. M.....	Postage and stamped envelopes.....	13 14
	194	Wm. Wurbs.....	Stable blanket.....	1 75
	195	Village of Lockport.....	Light, March, and water rent to July 1st.....	11 82
	196	W. O. Clark.....	Laundry.....	78
	198	E. D. Howland.....	Paint, brushes, etc.....	23 40

"K"—Continued.

Date.	No. of Vouch'r.	Name.	For What Expended.	Amount.
1900.				
March 31	200	W. L. Sackett	Expense as C. C. and P. M.	\$15 25
	201	Standard Oil Co.	Oil	16 20
	202	Wilcox Bros.	Mdse.	3 58
	204	Chas. C. Wilcox	Rubber boots	67 45
	206	Joseph Stephen	Blankets, etc.	3 00
	207	Barrett Hardware Co.	Hardware	35 25
	208	C. & A. Railway	Freight 2 cars coal, Greenview	37 98
	209	A. B. Bradish	Lumber—West end.	72 29
	210	R. Gebhard	Rubber boots	22 50
	211	John Haberlin	Hardware	22 40
	212	Phillip Schoch	Harness repairs	1 35
	213	F. X. Werling	Expense as foreman	25 16
	214	R. T. Smith	Hay, oats and straw	37 18
	215	Standard Fire Brick Co.	Brick	26 35
	216	F. S. Sleuder	Use of teams and wagons	2 25
	217	Wm. Fowlie	Feeding teams	2 50
	218	Taylor Bros.		2 00
	219	Wilmeroth & Frost	Hardware	11 80
	220	C. Diesterweg & Son	Rubber boots	13 50
	223	Greenview Coal & M. Co.	Coal	50 50
	225	W. H. Maze & Co.	Lumber	22 08
	226	Beatty & Ross		8 06
	227	Lawrence White	Express	2 00
	228	LaSalle Pres'd Brick Co.	Brick	2 80
	229	Leon McDonald	Expense as Gen. Supt.	18 55
	230	F. X. Werling	Extra pay roll, labor	284 37
	231	E. C. Smith		89 40
	232	Homer J. Tice	Expense as commissioner	25 00
	233	Howard O. Hilton		27 25
	234	C. E. Snively	" "	30 00
April 30	236	Leon McDonald	Pay roll for labor	208 33
	238	Chas. Dimmick	" "	342 28
	239	F. X. Werling	" "	400 75
	240	Wm. Keough	" "	606 75
	241	E. C. Smith		517 66
	244	Jones & McLaughlin	Washers, nuts, etc.	10 94
	247	Barrows Lock Co.	Repairs to steamer	4 00
	248	A. W. Hays & Co.	Cement	75 08
	249	Standard Oil Co.	Oil	23 82
	250	Bates Machine Co.	One dock valve	2 40
	251	Strong, Bush & Hand werk		
	252	A. L. Gaines & Son	Wagon jack-hose	5 50
	253	W. H. Lanfear	Blanket, sundries, etc.	3 72
	256	E. D. Howland	Hay and oats	73 07
	261	W. L. Sackett	Paint, paper, etc.	14 45
	262	C. W. Kipplinger, agent.	Expense as C. C. and P. M.	15 25
	263	Wm. Keough	Freight on two cars of coal	26 43
	264	W. B. Davis	Expense as foreman	12 15
	265	I. H. McKeen	Hay	11 98
	266	McGarr Bros.	Stabling teams	2 50
	267	John Haberlin	Horseshoeing	10 50
	268	John Pearce & Son	Hardware	6 75
	269	E. Y. Griggs	Dressing lumber	1 25
	270	Beatty & Ross	Sundries	8 91
	271	Peru Shoe Co.	Lumber	9 62
	272	Thomas Fallon	Rubber boots	24 00
	273	Wm. Fowlie	Four loads of sand	4 00
	274	W. H. Knowles	Feeding teams	18 50
	275	A. B. Bradish	Making bolts and washers	2 75
	276	Holzman Bros.	Lumber	7 92
	277	Robert Unzeiker	Hardware, etc.	2 15
	278	Dr. F. W. Weese	Hay and oats	11 73
	279	Poundstone, Ref for Hdwr. Co.	Veterinary services	3 00
	280	F. X. Werling	Hardware	8 55
	281	John R. Pitts	Expense as foreman	20 86
	282	John O'Donnell	Lanterns, globes, etc.	7 55
	283	Geo. T. Dowse	Postage and sundries	1 95
	284	George Soedler	Expense of team	4 00
	286	Greenview Coal & M. Co.	Shovels and picks	6 75
	289	W. H. Gardner	Coal (2 cars in Dec., 1899)	130 64
	291	C. E. Snively	Towing dredge and scows	35 00
	292	Leon McDonald	Expense as commissioner	25 00
	293	Homer J. Tice	Expense as Gen. Supt.	12 60
			Expense as commissioner	11 00

"K."—Continued.

Date.	No. of Vouch'r	Name.	For What Expended.	Amount.
1900.				
Apr.	30	295 Norton & Co.	Lumber.....	\$10 74
		296 Francis Kilduff.	Supplies for State boat No. 2.....	11 50
		297 W. H. Barnard.	.....	2 70
May	31	298 Leon McDonald.	Pay roll for labor.....	208 33
		299 Wm. Keough.	..	637 26
		300 Geo. T. Dowse.	..	987 50
		301 Chas. Dimmick.	..	569 87
		302 F. X. Werling.	..	359 25
		303 E. C. Smith.	..	515 48
		306 James Barron.	Water rent and expense as collector.....	11 62
		309 Marsh & Bingham Co.	Timber.....	28 20
		310 Village of Lockport.	Light, April, May, June.....	10 50
		311 John Cox.	Straw.....	7 28
		312 W. H. Lanfear.	Oats.....	24 30
		313 J. A. Freed, Agent.	Coal.....	13 21
		314 Dora Anderson.	Laundry.....	60
		317 I. B. Jennings.	Electric light and fittings.....	3 57
		318 Wm. Wurbs.	Harness repairs.....	2 35
		319 Wm. Keough.	Expense as foreman.....	18 00
		320 Geo. T. Dowse.	Money paid on sundry bills.....	35 42
		321 A. S. Felt.	Laundry.....	1 51
		322 Henry Miller.	Freight and cartage.....	4 66
		323 C. W. Kipplinger, Agt.	Express and telegrams, May.....	6 32
		324 John R. Pitts.	Supplies for steam tug.....	45 69
		325 Norton & Co.	Lumber.....	35 05
		326 People's Telephone Co.	Telephone to Sept. 1st.....	6 00
		327 H. A. Ketterling.	Horseshoeing and blacksmithing.....	20 45
		328 John R. Pitts.	Lamp chimneys, etc.....	1 85
		329 A. L. Gaines.	Carriage robe, etc.....	2 52
		332 Bates Machine Co.	Foundry work.....	1 56
		333 Strong, Bush & Hand- werk.	Labor.....	1 50
		334 C. H. Haskell.	Freight on coal.....	33 00
		335 Standard Oil Co.	Oil.....	9 66
		336 J. I. St. Julien.	Horse boot.....	75
		338 Barrett Hardware Co.	Hardware.....	140 69
		339 John Higgins.	Feeding teams.....	3 20
		340 Mrs. C. O. Wagner.	Boarding teams and men.....	6 15
		341 Morris Lumber Co.	Lumber.....	33 64
		342 R. S. Smith.	Oats.....	49 46
		343 S. G. Gay.	Wagon repairs.....	2 25
		344 McGarr Bros.	Horseshoeing.....	3 90
		345 A. B. Bradish.	Lumber.....	14 45
		346 Wilmeroth & Frost.	Log chains.....	3 50
		347 W. H. Maze & Co.	Lumber.....	7 04
		348 E. Y. Griggs.	Glass, paint, etc.....	16 42
		349 F. X. Werling.	Expense as foreman.....	14 04
		350 Wm. Marlett.	Horseshoeing.....	3 20
		351 Robert Herrocke.	Hardware.....	1 40
		352 Phillip Schoch.	Harness repairs.....	5 40
		353 John Haeberlin.	Hardware.....	15 37
		354 John Fitzgerald.	Harness repairs.....	1 50
		356 Greenview Coal & M. Co.	Coal.....	44 00
		357 Wm. Fowlie.	Feeding teams, etc.....	20 00
		358 Chas. Brunner.	Iron rods.....	2 00
		359 LaSalle County Coal Co.	Coal.....	56 95
		360 Robert Unzicker.	Hay and oats.....	4 76
		361 W. L. Sackett.	Expense as C. C. and P. M.....	17 80
		362 Robert E. Hills.	Valves, etc., for steamer.....	19 50
		363 Wm. Shuler.	Expense as captain on steamer on inspection trip.....	70 71
		364 C. E. Snively.	Expense as commissioner.....	38 80
		365 Howard O. Hilton.	.. ..	31 50
		366 Homer J. Tice.	.. ..	15 80
		367 Leon McDonald.	Expense as general superintendent.....	28 55
June	10	368 Olaus Paulson & Co.	Insurance.....	46 12
June	30	369 Leon McDonald.	Pay roll for labor.....	208 33
		370 Wm. Keough.	.. ..	407 43
		372 Chas. Dimmick.	.. ..	537 50
		373 F. X. Werling.	.. ..	383 75
		374 E. C. Smith.	.. ..	442 12
		375 A. E. Hostler Coal Co.	Coal.....	88 19
		376 Jones, Laughlin & Co.	Nuts, etc.....	33 20
		377 Cameron, Amberg & Co.	Clip fasteners.....	34
		7 Marsh & Bingham Co.	Timber.....	113 88

"K."—Continued.

Date.	No. of Vouch'r.	Name.	For What Expended.	Amount.
1900.				
June 30	379	Enterprise Paint Mfg. Co.	Paint and linseed oil.....	\$62 26
	380	Wm. Keough.....	Expense as foreman.....	9 52
	381	D. W. Ferguson.....	Office supplies.....	3 51
	382	A. S. Felt.....	Laundry.....	72
	383	C. S. Waterman.....	Railroad ticket.....	6 50
	384	E. D. Howland.....	Paint, oil, etc.....	30 94
	385	Henry Miller.....	Freight and cartage.....	5 03
	386	Adams Bros.....	Hardware and repairs.....	36 68
	387	W. L. Sackett.....	Expense as C. C. and P. M.....	16 10
	388	Village of Lockport.....	Light for July and water to Oct. 1.....	11 81
	389	George T. Dowse.....	Expense as foreman.....	2 91
	390	Wm. Shuler.....	Expense as captain steamer.....	7 95
	394	Strong, Bush & Hand- werk.....	18 in. ruby globe.....	2 00
	395	W. H. Lanfear.....	Hay and oats.....	67 24
	396	A. L. Gaines & Son.....	Carriage duster.....	2 00
	399	Standard Oil Co.....	Oil.....	19 39
	400	Bates Machine Co.....	Foundry work.....	17 75
	401	Barrett Hardware Co.....	Hardware.....	45 14
	402	E. C. Smith.....	Expense as foreman.....	2 68
	403	McGarr Bros.....	Blacksmithing.....	7 50
	404	Phillip Schoch.....	Harness repairs.....	1 85
	405	W. F. Weese.....	Veterinary services.....	2 50
	406	Sanders Bros. Mfg. Co.....	Timber for dredge.....	19 61
	407	Richard A. Smith.....	Hay and oats.....	31 50
	408	Wm. McElhenie.....	Feeding team.....	3 90
	409	I. H. Trowbridge.....	Wall paper.....	1 04
	410	F. X. Werling.....	Expense as foreman.....	10 90
	411	John O'Donnell.....	Expense as collector.....	1 70
	412	Wm. Fowlie.....	Feeding teams.....	11 50
	414	C. E. Snively.....	Expense as commissioner.....	45 00
	415	Leon McDonald.....	Expense as general superintendent.....	39 05
	416	Howard O. Hilton.....	Expense as commissioner.....	17 50
	417	Homer J. Tice.....	.....	25 00
	418	Norton & Co.....	Lumber.....	9 68
July 31	420	Leon McDonald.....	Pay roll for labor.....	208 33
	421	Wm. Keough.....	.....	599 50
	423	Chas. Dimmick.....	.....	513 00
	424	F. X. Werling.....	.....	352 63
	425	E. C. Smith.....	.....	416 05
	429	Heath & Milligan.....	Varnish.....	5 50
	430	Marsh & Bingham.....	Lumber.....	15 31
	431	Geo. B. Carpenter.....	Thirty-seven yards 8 oz. duck.....	3 70
	432	(Cameron, Amberg & Co.)	Stationery.....	11 84
	433	W. L. Sackett.....	Expense as C. C. and P. M.....	27 05
	434	C. W. Kipplinger, Agt.....	Freight on coal.....	67 13
	435	C. W. Kipplinger, Agt.....	Telegrams and express.....	2 87
	436	Village of Lockport.....	Light.....	3 50
	438	Wm. Keough.....	Expense as Asst. Supt.....	15 05
	439	Geo. T. Dowse.....	Expense as foreman.....	11 46
	441	Wm. Shuler.....	Expense captain steamer.....	22 50
	442	C. W. Kipplinger, Agt.....	Freight on coal.....	41 52
	443	Geo. W. Adelmann.....	Team.....	2 00
	444	P. R. Southcomb.....	Feeding teams.....	7 05
	445	U. T. Smith.....	Team.....	3 00
	446	LaSalle Co. C. Coal Co.....	Coal.....	19 38
	447	Haviland & Stoddard.....	Teams.....	5 50
	449	Standard Oil Co.....	Oil.....	4 73
	450	R. J. McLaren.....	Veterinary services.....	2 00
	451	Bates Machine Co.....	Repairs.....	1 85
	452	Hamilton & Vincent.....	Cement.....	1 85
	453	F. X. Werling.....	Expense as foreman.....	10 40
	454	McGarr Bros.....	Horseshoeing.....	4 50
	455	Wm. Wurbs.....	Harness repairs.....	2 10
	456	E. Y. Griggs.....	Oil.....	3 50
	457	S. G. Gay.....	Wagon wheels.....	8 00
	458	W. H. Knowles.....	Repairs.....	1 65
	459	John Haeberlin.....	Hardware.....	6 58
	460	Beatty & Wilson.....	Lumber.....	6 05
	463	Z. T. Bennett.....	Team.....	3 00
	465	Norton & Co.....	Lumber and hardware.....	24 32
	466	E. D. Howland.....	Paint and sundries.....	5 36
	467	Greenview C. & M. Co.....	Coal.....	89 50
	468	M. J. Hogan.....	Coal.....	15 36
	470	Homer J. Tice.....	Expense as commissioner.....	10 00
	471	Howard O. Hilton.....	.....	12 50

"K—Continued.

Date.	No. of Voucher	Name.	For What Expended.	Amount.
1900.				
July 31	472	Leon McDonald	Expenses as Gen. Supt.	\$ 23 20
	473	C. E. Snively	commissioner.	45 00
Aug. 31	474	Leon McDonald	Pay roll for labor	208 33
	475	Wm. Keough	"	721 00
	477	Chas. Dimmick	"	513 44
	478	F. X. Werling	"	378 73
	479	E. C. Smith	"	414 99
	481	Geo. B. Carpenter & Co	Supplies for repair boat	13 45
	482	James Barron	Expenses as collector	12 11
	484	J. W. Butler Paper Co.	Paper	6 30
	485	S. C. Schenck, Agt.	Coal	379 05
	486	James B. Clow & Sons	Car iron and three hydrants	215 71
	487	Cameron, Amberg & Co.	Stationery	4 50
	488	Marsh & Bingham Co.	Lumber	48 39
	489	Wyckoff, Seamans & Benedict	Typewriter ribbons	2 25
	490	Village of Lockport	Light for September	3 50
	491	Geo. T. Dowse	Barn rent, Joliet	16 00
	493	Wm. Wurbs	Harness repairs	2 00
	494	Wm. Keough	Expense as foreman	9 50
	495	W. H. Lanfear	Hay and oats	42 23
	496	Peoples Telephone Co.	Telephone Sept., Oct., Nov.	6 00
	497	Henry Miller	Freight and cartage	1 42
	498	C. W. Kipplinger, Agt.	Freight	172 49
	499	Wm. Shuler	Expense Capt. steamer	8 19
	500	A. S. Felt	Laundry	1 56
	501	Alex Davidson	Feeding teams	1 50
	502	Strong, Bush & Hand werk	Hardware	2 53
	503	Bates Machine Co.	One piece steel	75
	504	Standard Oil Co.	Oil	21 03
	505	Barrett Hardware Co.	Hardware	20 73
	506	Barrett Hardware Co.	"	13 88
	507	F. X. Werling	Expense as foreman	9 60
	508	Thomas Watts	Team	3 00
	509	R. Unzeicker	Feed	2 00
	510	Wm. McElheny	Stabling team	2 25
	511	R. A. Smith	Hay and oats	29 10
	512	E. J. Robson	Straw	60
	513	John Pearce & Son	Pump repairs	1 00
	514	A. B. Bradish	Lumber	24 86
	515	John Haebelin	Hardware	7 26
	516	McGarr Bros.	Horseshoeing	1 50
	518	S. J. Russell	Repairing boat	4 25
	519	Royal Oil Co.	Oil	4 50
	520	Greenview C. & M. Co.	Coal	40 50
	521	P. R. Southcomb	Teams and stabling	12 05
	522	Wm. Callaghan	Fixing bar	75
	523	H. A. Ketterling	Blacksmithing	21 05
	524	W. L. Sackett	Expense as C. C. & P. M.	22 75
	525	Homer J. Tice	commissioner	10 00
	526	Leon McDonald	general supt.	42 10
	527	Howard O. Hilton	commissioner	20 00
	528	C. E. Snively	"	40 00
	529	H. M. Snapp	attorney	23 70
	531	Excelsior Iron Works	Supplies and repairs	9 96
Sept. 30	533	Leon McDonald	Pay roll for labor	208 33
	534	Wm. Keough	"	648 88
	536	Chas. Dimmick	"	320 66
	537	E. C. Smith	"	391 54
	538	F. X. Werling	"	345 12
	540	John Spry Lumber Co.	Lumber	6 98
	541	Marsh & Bingham Co.	"	253 19
	543	A. L. Gaines & Son	Horse blanket and sundries	4 60
	545	Village of Lockport	Light, Oct.; water to Jan. 1, 1901	11 81
	546	Wm. Shuler	Expense inspection trip	61 90
	547	Leon McDonald	Expense as general supt.	41 15
	548	W. L. Sackett	Expense as C. C. & P. M.	21 75
	549	A. S. Felt	Laundry	84
	550	Norton & Co.	Lumber	7 26
	553	M. Walter	Office supplies	6 67
	554	Wm. Wurbs	Harness repairs	2 35
	557	Wm. Keough	Expense as assistant supt.	7 50
	558	Geo. T. Dowse	Expense as foreman	4 90
	559	W. H. Lanfear	Hay and oats	32 97

"K."—Continued.

Date.	No. of Voucher	Name.	For What Expended.	Amount.
1900. Sept. 30	560	C. W. Kipplinger, Agt..	Telegrams.....	\$ 2 14
	562	Barrett Hardware Co..	Hardware and rope.....	34 38
	563	Strong, Bush & Hand- werk	Hardware	85
	564	Bates Machine Co.....	Repairing piston.....	8 35
	566	A. P. Gillan.....	Hay.....	13 33
	567	F. B. Handwerk & Co..	Hardware.....	14 99
	568	Frank X. Werling.....	Expense as foreman.....	7 70
	569	A. B. Bradish.....	Lumber.....	52 38
	570	J. Kessler.....	Feeding teams.....	5 25
	571	John Haeberlin.....	Hardware.....	7 99
	572	Phillip Schoch.....	Harness repairs.....	4 80
	573	Dr. W. F. Weese.....	Veterinary services.....	3 00
	575	C. E. Snively.....	Expense as commissioner.....	45 00
	576	James B. Clow & Sons.	Valves and connections.....	22 13
	578	Western Union Tel. Co.	Telegrams.....	90
	579	Cameron, Amberg & Co.	Pens for treasurer.....	4 00
	581	Henry Miller.....	Freight and cartage.....	2 60
	582	Homer J. Tice.....	Expense as commissioners.....	11 15
	583	Howard O. Hilton.....	.....	15 00
Oct. 31	584	Leon McDonald.....	Poy roll for labor.....	208 33
	585	Wm. Keough.....	.....	609 0
	586	Chas. Dimmick.....	.....	536 25
	587	F. X. Werling.....	.....	357 75
	588	E. C. Smith.....	.....	439 98
	590	Marsh & Bingham Co..	Lumber.....	25 40
	591	Geo. B. Carpenter & Co.	Two bales Oakum.....	6 50
	592	John Spry Lumber Co..	Lumber.....	10 00
	595	Jones & Laughlin.....	Steel.....	17 82
	597	Frank Sloan.....	Calking lead and repairs.....	68 00
	598	Village of Lockport.....	Light for November.....	3 50
	599	Norton & Co.....	Lumber, hardware, etc.....	57 54
	600	C. A. Kellogg.....	Straw.....	15 98
	601	E. D. Howland.....	Paint, brushes, etc.....	9 75
	602	Wm. Wurbs.....	Harness repairs.....	2 30
	603	C. S. Allen.....	Straw.....	6 64
	604	W. H. Lanfear.....	Hay and oats.....	59 65
	605	Adams Bros.....	Hardware and work.....	11 54
	606	Wm. Keough.....	Expense as foreman.....	11 95
	607	Mrs. D. W. Ferguson.....	Supplies for boat.....	21 70
	609	Bates Machine Co.....	One piece steel.....	3 95
	610	Standard Oil Co.....	Oil.....	21 22
	611	Heggie Bros.....	Repairing boiler, etc.....	5 75
	612	M. J. Hogan.....	Coal.....	2 71
	613	F. X. Werling.....	Expense as foreman.....	7 45
	614	Beatty & Wilson.....	Lumber.....	58
	715	Wm. Fowlie.....	Feeding teams.....	5 75
	616	Taylor Bros.....	Team.....	2 00
	617	R. T. Smith.....	Hay and oats.....	29 88
	618	John Haeberlin.....	Hardware.....	1 30
	619	Phillip Schoch.....	Repairing harness.....	1 90
	620	Alfred Pyle.....	Blacksmithing.....	4 65
	621	E. Y. Griggs.....	Paint, etc.....	1 76
	622	A. B. Bradish.....	Lumber.....	3 44
	623	McGarr Bros.....	Blacksmithing.....	4 50
	624	Holeman Bros.....	Hardware.....	2 11
	626	E. E. Griffs.....	Court costs in Barber case.....	5 45
	628	Royal Oil Co.....	Oil.....	4 00
	629	John R. Pitts.....	Chimneys, sundries.....	5 24
	630	Barrett Hardware Co..	Hardware, etc.....	28 35
	632	Wm. Shuler.....	Expense inspection trip.....	63 20
	633	C. E. Snively.....	Expense as commissioner.....	45 00
	634	Leon McDonald.....	Expense as general superintend't.....	38 75
	635	Howard O. Hilton.....	Expense as commissioner.....	15 00
	636	W. L. Sackett.....	Expense as C. C. & P. M.....	16 75
	637	Homer J. Tice.....	Expense as commissioner.....	10 00
Nov. 30	638	Leon McDonald.....	Pay-roll for labor.....	208 33
	639	Wm. Keough.....	.....	496 50
	640	Chas. Dimmick.....	.....	292 80
	641	F. X. Werling.....	.....	553 80
	644	Wyckoff, Seamans & Benedict	Carbon paper.....	6 00
	645	James Barron.....	Expense as collector.....	8 84
	646	H. G. Bachman.....	Ice.....	24 00
	647	C. W. Kipplinger, Agt..	Freight on coal.....	23 06
	648	Norton & Co.....	Lumber and coal.....	22 32

"K."—Concluded.

Date.	No. of Vouch'r.	Name.	For What Expended.	Amount.
1900.				
Nov. 30	649	C. W. Peterson	Feed for teams	\$ 1 50
	650	W. H. Lanfear	Hay and oats	57 15
	951	Chas. Dimmick	Expense as foreman	53 59
	652	Henry Miller	Freight and cartage	2 13
	654	Village of Lockport	Light for December	3 50
	655	People's Telephone Co.	Telephone, Dec. 1900, Jan. and Feb. 1901	6 00
	660	William Keough	Expense as foreman	19 80
	651	George Foster	Team	3 00
	662	Carr & Spencer	Hay and straw	7 15
	663	R. A. Smith	Oats, hay and straw	58 23
Nov. 30	664	Willis Voorhees	Feeding teams	1 80
	665	E. C. Smith	Expense as foreman	15 71
	666	John Haebertlin	Hardware	7 55
	667	McGarr Bros	Horseshoeing	1 50
	668	F. X. Werling	Expense as foreman	9 70
	669	William Shuler	Expense as captain inspection trip	61 52
	670	John O'Donnell	Expense as collector	4 13
	671	Wm. McElhenie	Feeding team	1 75
	672	A. C. Johnston & Sons	Coal	20 03
	673	Barrett Hardware Co.	Hardware	4 46
	674	Strong, Bush & Hand- werk	"	40
	682	W. H. Maze & Co.	Lumber	3 31
	681	Greenview Coal & M. Co.	Coal	30 75
	686	LaSalle Co. Carbon Coal Co.	"	24 37
	687	Bates Machine Co.	Repairs	6 25
	688	C. E. Spively	Expense as commissioner	30 00
	689	W. L. Sackett	Expense chief clerk and paymaster	11 25
	690	Leon McDonald	Expense as superintendent	10 60
	695	Howard O. Hilton	Expense as commissioner	15 00
	696	Homer J. Tice	"	20 00
		Total		\$31,205 91

"L."

CHARGED TO TOLLS AND RENTS.

Date.	Voucher Number.	Name.	For What Expended.	Amount.
1899.				
Dec. 31	1	Leon McDonald	Pay roll for labor	\$1,163 33
1900.				
Jan. 31	76	Leon McDonald	"	1,203 33
Feb. 29	139	Leon McDonald	"	1,170 83
Mar. 31	177	Leon McDonald	"	1,188 33
	199	Lockport Phoenix	Stationery	3 25
April 30	236	Leon McDonald	Pay roll for labor	1,423 33
	294	Frank C. Corey	Printing	13 50
May 31	298	Leon McDonald	Pay roll for labor	1,423 33
	305	Cameron, Amberg & Co.	Stationery	8 40
June 30	369	Leon McDonald	Pay roll for labor	1,388 83
	397	J. A. Walter, P. M.	Postage and envelopes	20 00
July 31	420	Leon McDonald	Pay roll for labor	1,255 00
	464	J. A. Walter, P. M.	Postage and envelopes	21 74
Aug. 31	774	Leon McDonald	Pay roll for labor	1,255 00
	517	John O'Donnell	Expense as collector	3 29
Sept. 30	533	Leon McDonald	Pay roll for labor	1,255 00
	551	John A. Walter, P. M.	Postage and envelopes	22 82
	552	Lockport Phoenix	Printing and stationery	27 00
	577	Frank C. Corey	Printing	60 00
Oct. 31	584	Leon McDonald	Pay roll for labor	1,255 00
	593	Norton & Co.	Rebate on tolls	87
	594	James Barron	Expense collector's office	21 96
Nov. 30	638	Leon McDonald	Pay roll for labor	1,435 00
	652	Cameron, Amberg & Co.	Stationery	10 24
		Total		\$15,624 38

"M."

CHARGED TO CANAL PROPERTY.

Date.	Voucher Number.	Name.	For What Expended.	Amount.
1899.				
Dec. 31	55	E. W. Willard.....	Expense looking up canal lands....	\$20 15
1900.				
Jan. 31	82	Cameron, Amberg & Co.	Stationery, etc., treas.....	33 00
	102	M. Walter.....	Insurance.....	5 00
	109	E. W. Willard.....	Expense looking up canal lands....	35 30
	118	Will Co. Abstract Co....	Records.....	7 00
	122	The Herald.....	Advertising leases.....	5 80
	124	Republican Times.....	Advertising leases, etc.....	4 00
Feb. 28	168	E. W. Willard.....	Expense on canal lands.....	38 01
Mar. 31	197	E. W. Willard.....	Buggy for Supt.....	16 00
Apr. 30	343	Corneau & Co.....	Advertising water power.....	135 00
	246	Joliet Republican.....	Sundries.....	6 75
May 31	307	Geo. B. Carpenter & Co.	One Marine boiler.....	28 00
	337	Heggie Bros.....	Expense on canal lands.....	813 50
June 30	391	E. W. Willard.....	Postage and envelopes.....	29 50
	397	J. A. Walter, P. M.....	Expense in canal matters.....	7 35
July 31	437	E. W. Willard.....	Tracing maps.....	33 55
	440	Noah Whitley.....	Tracing Maps.....	15 00
Aug. 31	448	Meyer & McGarry.....	Services in P. E. McDonnell case....	18 00
	492	E. W. Willard.....	Expense in canal matters.....	25 00
	532	Meyer & McGarry.....	Expense in canal matters.....	14 70
Sept. 30	542	Franklin Engr. Co.....	Services in P. E. McDonnell matter	71 60
	544	Meyer & McGarry.....	Plate of map.....	14 00
	561	E. W. Willard.....	Services in McDonnell case.....	54 95
	565	Joliet Republican.....	Expense canal matters.....	34 60
Oct. 31	596	E. W. Willard.....	Advertising.....	3 00
	608	J. R. Van Horne.....	Expense canal matters.....	24 35
Nov. 30	656	E. W. Willard.....	Repairing chair.....	1 00
	657	E. W. Willard.....	Commission paid to secure pur- chasers for land.....	50 00
	659	Lockport Phoenix.....	Expense in land matters and San. Dist. suit.....	14 00
			Stationery.....	9 13
		Total.....		\$1,567 57

"N."

CHARGED TO EXTRAORDINARY EXPENDITURES.

Date.	Number of Voucher	Name.	For What Expended.	Amount.
1899.				
Dec. 31	2	Wm. Keough.....	Pay roll for labor.....	\$125 00
	3	George T. Dowse.....	" ".....	1,147 77
	4	Chas. Dimmick.....	" ".....	250 91
	6	Alvord & Shields.....	Engineering services Summit Level suit.....	337 50
	10	Griffin Bros.....	Stenographers Sanitary District conference.....	101 90
	12	W. L. Sackett.....	Money advanced expenses Sanitary District conference.....	144 35
	17	Fred Pigors.....	Inspector San. Dist. work.....	93 75
	18	J. S. McDonald.....	" ".....	93 75
	19	Herman Lintner.....	" ".....	93 75
	20	Wm. Wolf.....	" ".....	93 75
	21	Louis Lynch.....	Helper.....	52 00
	29	W. L. Sackett.....	Expense as C. C. & P. M.....	15 00
	38	Joliet Republican.....	Advertising.....	7 00
	43	Ebin J. Ward.....	Expense river dams suits.....	4 72
	49	John Howard.....	Sheriff river dams suits.....	9 00
	51	Chris Mamer.....	Record of Supreme Court in case Werling vs. Ingersol.....	85 50

"N."—Continued.

Date.	Number of Voucher	Name.	For What Expended.	Amount.
1899 Dec.	31	52 S. R. Ellis.....	Services as sheriff in river dams suit.....	\$17 70
		56 J. H. Franklin.....	Legal services in river dams suit.....	100 00
		58 Homer J. Tice.....	Expense as Commissioner.....	35 00
		59 Howard O. Hilton.....	.....	80 00
		62 H. M. Snapp.....	Expense as attorney and money advanced.....	96 75
		64 C. E. Snively.....	Expense as Commissioner.....	70 00
		65 Chris Mamer.....	Clerk's cost case Werling vs. Ingersoll.....	9 15
		66 F. C. Corey.....	Printing in river dams suits.....	222 00
		67 C. B. Garnsey.....	Legal services U. S. Court Summit Level suit.....	869 85
		68 James H. McKenney....	Costs U. S. Court Werling vs. Ingersoll suit.....	265 00
		70 H. M. Snapp.....	Legal service Summit Level suit and settlement pumping problem.....	1,150 00
		73 Leon McDonald.....	Expense as Gen. Superintendent..	13 95
1900 Jan.	31	77 Wm. Keough.....	Pay-roll for labor.....	255 58
		78 George T. Dowse.....	.....	1,832 61
		79 Chas. Dimmick.....	.....	781 63
		84 W. B. Crane & Co.....	Timbers for Chicago lock.....	106 20
		85 Marsh & Bingham Co....	.....	438 28
		86 Alvord & Shields.....	Engineering services Joliet and Dayton.....	437 30
		87 R. W. Hunt & Co.....	Cement tests at Joliet September.....	441 00
		89 Archie Felt.....	Tending waste gates dam No. 1, Joliet.....	146 00
		90 Louis Lynch.....	Assisting in cement tests.....	31 00
		91 J. S. McDonald.....	Inspector Joliet work.....	93 75
		92 Herman Lintner.....	.....	93 75
		93 William Wolf.....	.....	46 88
		95 Norton & Co.....	Lumber, etc.....	6 00
		101 W. L. Sackett.....	Expense of meetings, sundry bills paid.....	85 98
		108 Leon McDonald.....	Expense as superintendent.....	16 90
		111 Chicago & Alton Ry.....	Freight on coal.....	75 37
		119 Elsie Jane House.....	Typewriting in Summit Level suit.....	8 10
		128 S. A. Snow.....	Blue Prints Werling vs. Ingersoll case.....	18 00
		130 H. M. Snapp.....	Legal services in Wile cases and Werling vs. Ingersoll.....	113 00
		131 J. A. Freed, Agt.....	Coal for dredge work.....	188 25
		134 Homer J. Tice.....	Expense as Commissioner.....	25 00
		140 Wm. Keough.....	Pay-roll for labor.....	266 00
		141 George T. Dowse.....	.....	1,055 44
		142 Chas. Dimmick.....	.....	684 50
		151 Archie Felt.....	Tending waste gates.....	56 00
		152 Herman Lintner.....	Inspector San. Dist. Joliet.....	93 75
		153 J. S. McDonald.....	.....	93 75
		154 W. L. Sackett.....	Expense as C. C. & P. M.....	36 70
		164 Robt. W. Hunt & Co.....	Cement tests, dam No. 1.....	631 92
		174 Bates Machine Co.....	Castings, Bridgeport.....	15 25
		176 Lincoln & Stead.....	Legal services Ingersoll case—Dayton Water Power.....	6,050 00
		178 Wm. Keough.....	Pay-roll for labor.....	325 29
		179 Geo. T. Dowse.....	.....	1,073 42
		180 Chas. Dimmick.....	.....	489 00
		182 F. X. Werling.....	.....	332 25
		185 Marsh & Bingham.....	Timber.....	60 32
		186 Security Title & Trust Co.....	Abstract Chicago lands.....	78 00
		188 Alvord & Shields.....	Apportioning Dayton water power.....	63 00
		203 Bates Machine Co.....	Valves, etc.....	38 94
		205 F. D. Willard.....	Making maps.....	14 40
		222 W. B. Gillam, Dep. Clerk	Expense San. Dist. injunction suit.....	5 75
		224 H. E. Griffith.....	Costs in San. Dist. injunction suit.....	46 00
		229 Leon McDonald.....	Expense as general supt.....	25 00
		235 Chipperfield, Grant & Chipperfield.....	Legal services San. Dist. Dam Removal cases.....	5,000 00

"N."—Continued.

Date.	Number of Vouch'r.	Name.	For What Expended.	Amount.
1900.				
April 30	237	Geo. T. Dowse	Pay-roll for labor.....	\$1,157 02
	238	Chas. Dimmick	"	225 25
	245	Marsh & Bingham	Timbers.....	238 72
	254	J. S. McDonald	Inspector Joliet work.....	18 05
	255	Herman Lintner	"	18 05
	257	E. R. Spafford	Tending waste gates, March.....	26 00
	258	Archie Felt	"	62 00
	259	Archie Felt	" April.....	36 00
	260	E. R. Spafford	"	60 00
	286	A. D. Cadwallader	Opinion San. Dist. suit river dams.....	6 10
	287	John F. Howard	Guarding Henry dam.....	42 00
	291	C. E. Snively	Expense as Commissioner.....	30 00
	292	Leon McDonald	"	25 00
May 31	300	Geo. T. Dowse	Pay-roll for labor.....	227 28
	306	Alvord & Shields	Engineering services Joliet tail race.....	46 25
	315	Herman Lintner	Inspector Joliet work.....	93 75
	316	J. S. McDonald	"	93 75
	330	E. R. Spafford	Tending water, Joliet.....	44 00
	331	W. H. Wallace	Towing dredge to Bridgeport.....	20 00
June 30	370	Wm. Keough	Pay-roll for labor.....	225 82
	371	Geo. T. Dowse	"	1,091 27
	392	J. S. McDonald	Inspector Joliet work.....	21 87
	393	Herman Lintner	"	21 87
	398	H. M. Snapp	Services San. Dist. suit, Fulton Co.....	2,000 00
	419	H. M. Snapp	Expense as attorney.....	14 65
July 31	422	Geo. T. Dowse	Pay-roll for labor.....	689 26
	469	Alvord & Shields	Engineering services Oliver water power.....	33 50
Aug. 31	476	Geo. T. Dowse	Pay-roll for labor.....	635 02
Sept. 30	535	Geo. T. Dowse	"	334 60
	536	Chas. Dimmick	"	157 34
	555	Herman Lintner	Inspector Joliet work.....	18 75
	556	J. S. McDonald	"	87 50
Oct. 31	585	Wm. Keough	Pay-roll for labor.....	186 75
	631	J. S. McDonald	Inspector Joliet work.....	93 75
Nov. 30	639	William Keough	Pay-roll for labor, Ottawa aqueduct.....	354 88
	640	Chas. Dimmick	"	285 84
	641	F. X. Werling	"	194 58
	643	J. Frank Murphy	Certified copies contra'ts San. Dist. injunction suit.....	40 00
	653	J. S. McDonald	Inspector, Joliet work.....	46 88
	657	E. W. Willard	Expense land matters and Sanit'y Dist. injunction suit.....	5 21
	658	William Shuler	Expense steam tug on Ottawa ac- queduct.....	16 20
	673	Barrett Hardware Co....	Hardware.....	26 05
	689	W. L. Sackett	Expense chief clerk and paymaster San. Dist. injunction suit.....	32 25
	690	Leon McDonald	Expense as superintendent San. Dist. injunction suit.....	21 40
	691	Alvord & Shields	Engineers and witnesses San. Dist. injunction suit.....	40 75
	692	G. A. M. Liljencrantz....	Engineer and witness San. Dist. injunction suit.....	81 40
	693	W. L. Sackett	Amount advanced in payment of costs and bills in San. Dist. in- junction suit.....	135 90
	694	H. M. Snapp	Amount expended for certified copies, R. R. fare, etc., San. Dist. injunction suit.....	46 20
	695	Howard O. Hilton	Expense commissioner San. Dist. injunction suit.....	15 00
	696	Homer J. Tice	Expense commissioner San. Dist. injunction suit.....	21 85
		Total.....		\$36,805 87

CHARGED TO LOUKAGE AT HENRY.

Date.	Voucher No.	Name.	For What Expended.	Amount.
1899.				
Dec. 31	1	Leon McDonald.....	Pay roll for labor	\$92 50
	50	Weimer Schlosser	Fire wood.....	3 25
1900.				
Jan. 31	76	Leon McDonald.....	Pay roll for labor	75 00
	129	John Kraus	Pair rubber boots	4 00
Feb. 28	139	Leon McDonald.....	Pay roll for labor	75 00
Mar. 31	177	Leon McDonald.....	Pay roll for labor	92 50
	201	Standard Oil Co.	Oil	6 24
Apr. 30	236	Leon McDonald.....	Pay roll for labor	110 00
May 31	298	Leon McDonald.....	Pay roll for labor	110 00
	355	Wm. Kuss.....	Repairing railing	8 25
June 30	369	Leon McDonald.....	Pay roll for labor	110 00
	413	O. W. Gehring	Fixing lock	2 00
July 31	420	Leon McDonald.....	Pay roll for labor	110 00
	433	W. L. Sackett.....	Expenses as C. C. & P. M.	7 50
	449	Standard Oil Co.	Oil	5 78
	461	George Merdian	Work on lock	1 50
Aug. 31	474	Leon McDonald.....	Pay roll for labor	110 00
Sept. 30	533	Leon McDonald.....	Pay roll for labor	110 00
Oct. 31	584	Leon McDonald.....	Pay roll for labor	110 00
	625	George Merdian	Labor on lock	3 00
Nov. 30	638	Leon McDonald.....	Pay roll for labor	110 00
	675	J. E. & F. A. Powell	Lamp chimneys, etc	11 70
	676	Lee R. Kinnear	Expense as collector	4 30
	677	Duke Bros	Grease	1 00
	678	L. A. Meier & Son	Hardware	7 85
	679	H. & E. F. Hunter.....	Lumber	9 52
	680	Philip Steimle.....	Wood	1 50
	681	William Kuss.....	Repairing cable	2 50
		Total.....		\$1,294 89

"P"

CHARGED TO LOCKAGE AT COPPERAS CREEK.

Date.	Voucher No.	Name.	For What Expended.	Amount.
1899.				
Dec. 31	1	Leon McDonald.....	Pay roll for labor	\$92 50
1900.				
Jan. 31	76	Leon McDonald.....	"	75 00
	136	Mrs. E. S. Barber.....	Teams	4 00
	137	Chas. Bonner	"	6 50
Feb. 28	139	Leon McDonald.....	Pay roll for labor	75 00
	167	George Woodruff.....	"	8 25
March 31	177	Leon McDonald.....	"	75 00
	184	George Woodruff.....	"	9 00
	221	Oakford & Fahnestock.	Oil	6 08
April 30	236	Leon McDonald.....	Pay roll for labor	145 00
	242	George Woodruff.....	"	13 50
	285	T. B. Bass.....	Paint and brushes.....	5 35
	290	C. T. Moore	Wall paper	18 30
	294	Frank C. Corey	Printing	2 50
May 31	298	Leon McDonald.....	Pay roll for labor	110 00
	304	George Woodruff.....	"	28 50
June 30	369	Leon McDonald.....	"	110 00
July 31	420	Leon McDonald.....	"	110 00
	426	George Woodruff.....	"	119 75
	427	George Woodruff.....	Repairs at lock	3 15
	428	George Woodruff.....	Pay roll for labor	153 25
	462	Clark, Quein & Morse..	Wire cloth	9 75
Aug. 31	474	Leon McDonald.....	Pay roll for labor	110 00
	480	George Woodruff.....	Pay roll for labor	15 00
	487	Cameron, Amberg & Co.	Stationery	63
	524	W. L. Sackett.....	Expense as C. C. & P. M.....	6 50
	530	Aermoter Co.	Repairing motor	3 90
Sept. 30	539	Leon McDonald.....	Pay roll for labor	110 00
	539	George Woodruff.....	Pay roll for labor	108 15
	574	T. B. Bass.....	Hardware	2 90
	577	Frank C. Corey	Printing	15 50
	580	George Woodruff.....	Lanterns	1 45
Oct. 31	584	Leon McDonald.....	Pay roll for labor	110 00
	589	George Woodruff.....	Pay roll for labor	27 00
	627	J. B. Gardiner	Iron pump and pipe.....	11 50
Nov. 30	638	Leon McDonald.....	Pay roll for labor	110 00
	683	George Woodruff.....	Expense as collector.....	1 00
	685	Standard Oil Co	Oil	5 17
		Total.....		\$1,751 15

APPENDIX

*Containing Tabular Exhibits of Canal Data, Report of the General
Superintendent, Treasurer's Report, and Detailed Report
of Investigation of Canal Ownership of Lands.*

Exhibit from 1848 to 1900, inclusive.

Year.	Ordinary repairs.	Extraordinary repairs, renewals, and hydraulic works.	Gross expenses.	Tolls.	Canal opened.	Canal closed.	Number of days open.....
1848.....	\$36,452	\$6,744	\$43,197	\$87,890	April 19	November 29	224
1849.....	43,922	29,999	70,932	118,375	20	December 6	231
1850.....	38,418	19,996	68,415	125,504	March 22	" 8	259
1851.....	39,447	19,027	58,475	173,300	" 15	" 8	269
1852.....	42,816	10,692	53,508	168,577	" 29	" 8	255
1853.....	40,383	4,486	44,870	173,372	" 14	" 12	274
1854.....	36,587	16,654	53,242	198,326	" 15	" 2	263
1855.....	38,216	32,657	70,873	180,519	April 3	" 12	253
1856.....	33,101	58,357	91,458	184,310	" 8	" 4	241
1857.....	37,256	65,825	103,082	197,830	May 8	November 20	204
1858.....	36,115	21,972	58,088	197,171	April 1	December 1	244
1859.....	34,026	40,406	74,432	132,147	March 19	" 3	263
1860.....	34,308	42,275	82,583	138,554	" 8	November 28	263
1861.....	39,238	15,823	55,061	218,040	" 4	" 23	270
1862.....	40,024	15,337	55,362	264,647	April 1	December 3	247
1863.....	49,294	13,021	62,315	210,386	March 4	" 1	273
1864.....	47,625	18,572	66,107	156,607	" 10	" 1	265
1865.....	39,255	85,614	124,869	300,810	April 10	November 15	220
1866.....	43,716	72,647	116,363	202,958	" 11	October 31	203
1867.....	46,152	116,504	162,656	252,131	" 10	November 15	222
1868.....	52,964	69,067	122,052	215,720	" 1	October 31	210
1869.....	48,514	42,251	91,765	238,759	" 7	November 15	232
1870.....	43,098	65,597	108,695	149,635	" 7	October 8	184
1871.....	54,555	42,667	97,222	159,050	" 6	November 25	234
1872.....	42,575	46,091	88,576	165,874	" 1	December 1	245
1873.....	53,525	27,572	81,098	166,641	" 10	November 20	225
1874.....	49,139	24,659	73,798	144,831	March 30	" 20	336
1875.....	46,241	28,270	74,511	107,081	" 15	" 28	228
1876.....	42,418	49,167	91,585	113,293	" 25	" 18	239
1877.....	53,965	55,953	110,018	96,913	April 16	December 1	230
1878.....	43,828	39,013	82,840	84,330	March 20	" 1	257
1879.....	a 44,077	52,525	97,701	89,064	" 29	November 20	237
1880.....	b 47,604	77,907	125,601	92,296	" 22	" 18	242
1881.....	c 53,597	54,626	108,223	85,130	April 25	" 26	216
1882.....	d 57,309	43,103	104,412	85,947	March 13	" 30	263
1883.....	e 56,515	60,241	116,756	77,975	April 2	" 25	238
1884.....	f 55,731	43,549	99,289	77,102	" 7	December 1	239
1885.....	g 47,659	38,734	86,393	66,900	" 16	November 25	225
1886.....	h 44,101	28,329	72,430	62,516	" 1	" 25	239
1887.....	i 43,509	27,876	71,385	58,024	" 1	" 19	233
1888.....	j 43,606	33,240	76,845	56,028	" 10	" 15	220
1889.....	k 42,907	42,571	85,479	60,605	March 25	" 15	236
1890.....	l 40,258	34,867	75,125	55,112	April 1	" 21	235
1891.....	m 43,501	29,091	72,592	49,557	" 1	" 22	236
1892.....	n 43,476	23,661	67,137	54,937	" 1	" 15	229
1893.....	o 39,063	20,459	59,522	38,702	" 1	" 15	229
1894.....	p 36,965	17,273	54,258	44,928	" 1	" 15	229
1895.....	q 33,760	37,392	71,142	39,106	" 1	" 15	229
1896.....	r 31,541	46,446	77,987	32,100	" 1	" 15	229
1897.....	s 31,524	36,793	68,307	33,065	" 1	" 15	229
1898.....	t 30,859	19,342	78,966	38,570	" 1	" 15	229
1899.....	u 31,768	22,368	91,196	41,021	" 1	" 15	229
1900.....	v 31,205	36,805	88,317	13,867	" 1	.....	.....

NOTE.—The figures in the above table, from 1848 to May 1, 1871, are given by the Trustees of the Illinois and Michigan Canal.

‡ In this amount is \$15,400 paid collectors, locktenders and incidentals, which would leave the amount properly chargeable to ordinary repairs, \$38,125.

* In this amount is \$15,399 paid collectors, locktenders and incidentals, which would leave the amount properly chargeable to maintenance and repairs, \$33,740.

† In this amount is \$14,523 paid collectors, locktenders and incidentals, which would leave the amount properly chargeable to ordinary repairs, \$51,718.

‡ In this amount is \$21,757 paid collectors, locktenders and incidentals, which would leave the amount properly chargeable to ordinary repairs, \$42,140.

** In this amount is \$12,825 paid collectors, locktenders and incidentals, which would leave the amount properly chargeable to ordinary repairs, \$42,140.

*** In this amount is \$12,954 paid collectors, locktenders and incidentals, which would leave the amount properly chargeable to ordinary repairs, \$30,872.

a In this amount is \$14,592 paid collectors, locktenders and incidentals, which would leave the amount properly chargeable to ordinary repairs, \$29,484.

b In this amount is \$15,273 paid collectors, locktenders and incidentals, which would leave the amount properly chargeable to ordinary repairs, \$32,331.

c In this amount is \$18,299 paid collectors, locktenders and incidentals, which would leave the amount properly chargeable to ordinary repairs, \$35,298.

d In this amount is \$18,937 paid collectors, locktenders and incidentals, which would leave the amount properly chargeable to ordinary repairs, \$38,372.

e In this amount is \$21,241 paid collectors, locktenders and incidentals, which would leave the amount properly chargeable to ordinary repairs, \$35,274.

f In this amount is \$22,413 paid collectors, locktenders and incidentals, which would leave the amount properly chargeable to ordinary repairs, \$33,318.

g In this amount is \$16,157 paid collectors, locktenders and incidentals, which would leave the amount properly chargeable to ordinary repairs, \$31,502.

h In this amount is \$15,272 paid collectors, locktenders and incidentals, which would leave the amount properly chargeable to ordinary repairs, \$28,829.

i In this amount is \$13,805 paid collectors, locktenders and incidentals, which would leave the amount properly chargeable to ordinary repairs, \$20,704.

j In this amount is \$13,136 paid collectors, locktenders and incidentals, which would leave the amount properly chargeable to ordinary repairs, \$30,469.

k In this amount is \$13,248 paid collectors, locktenders and incidentals, which would leave the amount properly chargeable to ordinary repairs, \$29,659.

l In this amount is \$13,089 paid collectors, locktenders and incidentals, which would leave the amount properly chargeable to ordinary repairs, \$27,169.

m In this amount is \$16,384 paid collectors, locktenders and incidentals, which would leave the amount properly chargeable to ordinary repairs, \$27,117.

n In this amount is \$13,240 paid collectors, locktenders and incidentals, which would leave the amount properly chargeable to ordinary repairs, \$30,236.

o In this amount is \$13,303 paid collectors, locktenders and incidentals, which would leave the amount properly chargeable to ordinary repairs, \$25,760.

p In this amount is \$13,572 paid collectors, locktenders and incidentals, which would leave the amount properly chargeable to ordinary repairs, \$23,412.

q In this amount is \$13,557 paid collectors, locktenders and incidentals, which would leave the amount properly chargeable to ordinary repairs, \$20,203.

r In this amount is \$13,642 paid collectors, locktenders and incidentals, which would leave the amount properly chargeable to ordinary repairs, \$17,899.

s In this amount is \$14,987 paid collectors, locktenders and incidentals, which would leave the amount properly chargeable to ordinary repairs, \$16,537.

t In this amount is \$12,249 paid in salaries and incidentals, which would leave the amount properly chargeable to ordinary repairs, \$18,610.

u In this amount is \$11,963 paid in salaries and incidentals, which would leave the amount properly chargeable to ordinary repairs, \$19,805.

v In this amount is \$9,182 in salaries and incidentals, which would leave the amount properly chargeable to ordinary repairs, \$22,023.

Statement of number of canal boats running; of miles run; of clearances issued, and of tons transported on the Illinois and Michigan Canal forty years, viz: From 1860 to 1900, inclusive.

Date.	Clearances.	Boats running.	Miles run.	Tons transported.
1860	2,926	201	235,684	367,437
1861	6,339	194	415,599	547,295
1862	7,044	211	474,976	673,590
1863	5,810	240	118,713	619,599
1864	4,527	298	300,340	510,286
1865	3,907	298	360,614	616,140
1866	5,488	230	406,784	746,815
1867	4,183	209	357,623	746,815
1868	4,128	218	345,169	737,727
1869	4,524	219	285,050	817,738
1870	2,903	179	246,650	585,970
1871	3,523	186	278,948	628,975
1872	*5,018	173	334,820	783,641
1873	*4,743	172	328,164	849,533
1874	*4,296	152	288,075	712,020
1875	*2,554	142	259,878	670,025
1876	*4,049	146	302,024	691,943
1877	*4,908	145	272,788	605,912
1878	*4,299	140	293,335	598,792
1879	*1,458	136	304,191	669,559
1880	*4,536	133	320,009	751,360
1881	*4,459	132	316,435	826,133
1882	*4,055	132	335,710	1,011,287
1883	*3,789	132	306,618	925,575
1884	*4,204	134	325,421	956,721
1885	*3,900	135	304,664	827,355
1886	*3,783	130	303,575	808,019
1887	*3,824	132	290,388	742,074
1888	*3,326	122	287,771	751,055
1889	*4,299	114	334,107	917,047
1890	*2,920	104	260,713	742,392
1891	*2,203	77	243,214	641,156
1892	*3,014	95	260,149	783,288
1893	*2,452	82	187,904	529,816
1894	*2,907	85	206,875	617,811
1895	*2,664	88	196,132	591,507
1896	*2,660	67	187,289	446,762
1897	*4,151	64	179,954	484,575
1898	*3,523	64	152,960	395,017
1899	*4,705	70	173,312	469,352
1900	*2,920	60	99,409	121,759

*Includes clearances at Henry and Copperas Creek.

Leases of Water Power.

The following is a schedule of the leases as they now stand:

Name of Lessee.	Description of Lease.	Time.	Date Given or Time Renewal.	Payable.	Yearly Rental	Remarks.
Norton & Co	Lot 1, block 122, Lockport.....	13 years	March 4, 1898.....	Semi-annually ..	\$300 00	Rent of lot 1 not included....
Norton & Co	Lot 6, block 122, Lockport.....	13 "	May 1, 1898.....	" ..	200 00	" ..
Norton & Co	Surplus water at Lockport.....	20 "	July 1, 1898.....	" ..	2,500 00	Ground rent not included....
Economy Light & Power Co ..	Dam No. 1, Joliet.....	20 "	July 18, 1898.....	" ..	10,748 00	" ..
David Oliver.....	Channahon Level.....	10 "	July 1, 1898.....	" ..	748 80	" ..
David Oliver.....	" ..	10 "	Oct. 1, 1900.....	Monthly	2,000 00	Ground rent not included....
Joliet Builders Supply Co ..	" ..	Monthly ..	Oct. 1, 1900.....	Semi-annually ..	" ..	" ..
Ottawa Hydraulic Co.....	Ottawa	20 years	May 1, 1892.....	" ..	750 00	" ..

UNSOLD CANAL LOTS NOVEMBER 30, 1900.

Lots.	Block.	Valuation.	Total.
CHICAGO.			
Being in Canal Commissioners' subdivision of that part of southwest $\frac{1}{4}$ section 29, Tp. 39, R. 14 east, lying south of the main canal, west of river, and known as blocks 12 and 13 of Canal Trustees' subdivision of blocks 10, 10 $\frac{1}{2}$, 11, 12, 13 and southwest $\frac{1}{4}$ section 29, 39, 14. Also block "A" not previously surveyed or platted, in southwest $\frac{1}{4}$ section and east of Chicago river			
	12	*\$50,000 00	
	12 $\frac{1}{2}$	150,000 00	
	13	*12,000 00	
	A	*1,000 00	
In Canal Trustees' new subdivision east fraction southwest fraction $\frac{1}{4}$ section 21, 29, 14.....	35	6,000 00	
			<u>\$119,000 00</u>
LOCKPORT.			
Sub lots 2 and 3 of subdivision of lot 3.....	63	\$100 00	
Sub lot 2 of subdivision of lot 4.....	63	50 00	
1, 2.....	71	\$210,000 00	
3, 4, 5.....	102	**3,000 00	
Vacated street between blocks.....	102-3	**600 00	
1, 2, 3, 4, 5.....	103	**3,000 00	
Vacated street between.....	103-14	**600 00	
1, 2, 3, 4, 5.....	103	3,000 00	
1, 2, 3.....	114	1,400 00	
2.....	116	††1800 00	
5, 6, 7, 8, 9, 10, 11, 12.....	121	3,500 00	
1, 2, 3, 4, 5, 6.....	122	4,000 00	
Strip northeast of and adjoining.....	122	300 00	
1, 2, 3, 4, 5.....	123	3,000 00	
1, 2, 3, 4.....	126	400 00	
.....	129	150 00	
.....	131	25 00	
.....	134	50 00	
.....	135	100 00	
8 $\frac{1}{8}$ acres west of river west $\frac{1}{2}$ section 23, T. 36, R. 10, Lockport		865 00	
			<u>\$34,940 00</u>
JOLIET.			
South 6 lots of block 1, North Joliet.....		\$1,200 00	
Block 2, North Joliet, 10 lots		2,000 00	
Block 3, lots 4, 5, 6, 7, 8—5 lots, at \$200.00 each.....		1,000 00	
Block 5, lot 10.....		1,000 00	
Vacated street between blocks 36 and 37.....		500 00	
Block 37, lots 11, 12, 13, 14, 15.....		3,800 00	
East $\frac{1}{2}$ of lots 8, 9, 10, 12, block 1, West Joliet.....		740 00	
			<u>\$10,240 00</u>
NEW HAVEN (On the Little Wabash River.)			
27 acres, at \$10.00.....		\$270 00	
			<u>\$270 00</u>
DUPAGE (Now Called Channahon.)			
4.....	4	\$100 00	
8, 9, (worth nothing) inundated.....	4	.....
3.....	16	10 00	
1, 2.....	21	40 00	
.....	52	300 00	
			<u>\$450 00</u>

Lots.	Block.	Valuation.	Total.
KANKAKEE.			
Blocks 30, 31, 32, 34, 37, 38, 39, 40 and 42, being in section 31, township 34, range 9 east, 3d P. M., containing 16 $\frac{1}{4}$ acres, at \$25 per acre.....		\$408 00	<u>\$408 00</u>
MORRIS.			
Lying between canal and Illinois river.....	B	200 00	<u>\$200 00</u>
OTTAWA (Original Town.)			
1, 2, 3, 4, 5, 6, 7, 8.....	20	10 00	
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12.....	21	4,000 00	
1, 2, 3, 4, 5, 6.....	22	600 00	
	23	600 00	
	24	300 00	
	25	500 00	
	26	500 00	
	27	400 00	
	28	2,850 00	
		\$6,960 00	
STATE'S ADDITION TO OTTAWA.			
3, 4, 5.....	38	**3,500 00	<u>\$10,460 00</u>
LaSALLE.			
1, 2, 3 and part of 4.....	141	\$1,400 00	
1, 2, 3.....	142	750 00	<u>\$2,150 00</u>
PERU.			
Outlots 7, 8, 9 and 10 in Canal Trustee's subdivision, northeast fractional section 21, 33, 1.....		\$1,000 00	<u>\$1,000 00</u>
CITY OF HENRY.			
3, 937 acres, being east part of lot 26.....		800 00	<u>\$800 00</u>
BANNER, FULTON COUNTY.			
23 acres near Copperas Creek lock		240 00	<u>\$240 00</u>

* Includes buildings.

† Includes buildings—collector's office, two houses and hydraulic buildings.

‡‡ Includes buildings, viz.: Canal office, house and barn.

** Includes buildings, viz.: Shops at State Yard, barn, blacksmith shop.

††† Includes buildings, viz.: Lock house.

*** Includes buildings, viz.: State shops, barns, sheds, locktender's house.

Unsold Canal Lands November 30, 1900.

Description.	Section.	Town.	Range.	Acres.	Valuation per acre.	Valuation per tract.
Three small islands	15	33	4	.....	.....	\$5 00
Part of island in north half	17	33	4	.....	.....	5 00
Island in	1	33	7	13.09	\$1 00	13 09
Strip in	1 and 12	38	12	2.25	150 00	337 50
Total .....	.....	.....	.....	.....	.....	\$360 59

Recapitulation.

Canal Lots and Tracts.	Valuation.	Total.
Chicago 7	\$119,000 00	
Lockport 49	34,940 00	
Joliet 43	10,390 00	
DuPage 7	550 00	
Kankakee 11	408 00	
Morris 1	200 00	
Ottawa 35	10,460 00	
LaSalle 7	2,150 00	
Peru 4	1,000 00	
Henry 3.37 acres	800 00	
Banner, Fulton county 24	240 00	
Unsold lands		\$180,138 00
Total		360 59
		\$180,498 59

Statement of the Principal Articles Transported upon the Illinois and Michigan Canal and Illinois River, cleared at Collectors' Offices, on the Illinois and Michigan Canal and Locks at Henry and Copperas Creek, for the year ending November 30, 1900.

Articles.	Measure.	Canal.	Lock at Henry.	Lock at Copperas Creek.	Total.
Articles not enumerated.....	Pounds	56,945	100,030	.....	156,975
Agricultural implements .....	.....	113,270	1,700	.....	130,270
Brick.....	.....	.....	.....	25,000	25,000
Barrels, empty	Pounds	350,918	14,270	.....	265,186
Corn.....	Bushels	2,052,089	73,911	42,050	2,168,050
Coal.....	Tons	1,920	.....	.....	1,920
Eggs.....	Dozen .....	.....	159	.....	159
Flour, in sacks.....	Sacks	133,514	364	.....	133,878
Flour, in barrels	Barrels	29,871	.....	.....	29,871
Furniture.....	Pounds .....	.....	500	.....	500
Flooring, dressed	Feet.....	5,000	.....	.....	5,000
Ice.....	Tons	1,920	.....	2,000	3,920
Iron, all kinds	Pounds	1,056	900	.....	1,956
Lath.....	Number	17,000	.....	.....	17,000
Lime, common	Barrels .....	.....	14	.....	14
Lime, hydraulic .....	.....	7	.....	.....	7
Passengers	Number	1,111	2,614	5,455	9,180
Lumber.....	Feet.....	623,614	13,000	15,000	651,614
Meal.....	Pounds	4,221,593	.....	.....	4,221,593
Machinery .....	.....	328,690	4,200	17,000	349,890
Merchandise .....	..	336,740	407,250	2,705,530	3,449,620
Nails and spikes.....	.....	.....	800	.....	800
Oats.....	Bushels.....	572,773	55,700	500	628,973
Oats, rolled	Pounds	225,525	.....	.....	225,525
Oils.....	Barrels.....	12	140	.....	152
Posts and rails	Number	150	.....	.....	150
Railroad ties.....	.....	670	.....	.....	670
Rye.....	Bushels .....	.....	1,100	.....	1,100
Stone, dimension.....	Cubic yards.....	1,750	.....	.....	1,750
Stone, dressed .....	.....	25	.....	.....	25
Stone, spoil bank .....	..	400	.....	.....	400
Stone, rip rap .....	.....	11,962	.....	.....	11,962
Sand.....	Tons	86	.....	.....	86
Straw.....	.....	22 ¹ / ₂	.....	.....	22 ¹ / ₂
Shingle.....	M	505 ¹ / ₂	.....	16 ¹ / ₂	522
Salt.....	Barrels	550	.....	.....	550
Wheat.....	Bushels	361,457	9,275	14,300	385,032
Wagons	Pounds .....	.....	1,600	.....	1,600
Wood.....	Cords	829	.....	.....	829
Boats.....	Miles	87,545	458	11,406	99,409
Saw logs	Number .....	.....	.....	7,695	7,695

Rates of Tolls and Lockage Established upon the Illinois and Michigan Canal and the Locks at Henry and Copperas Creek, in the Illinois River.

By resolution of the Board of Canal Commissioners, adopted in April, 1899, to take effect upon the opening of navigation.

On freight boats, per mile on the canal, 3 cents.

Lockage at Henry and Copperas Creek on all boats of 150 tons and under shall be \$1.50, and this charge shall be made at each lock.

On boats of more than 150 tons measurement lockage shall be charged at the rate of one cent per ton measurement, and this charge shall be made at each lock: *Provided*, that on boats passing through the lock in fleets of two or more, engaged in regular traffic, requiring only a single lockage, the lockage charge, by ton measurement or otherwise, may be divided between said boats at each lock.

The lockage of cabin boats, in tow of steamers or canal boats, shall be 25 cents each; fuel boats in tow of steamers, 50 cents; row boats, in tow of steamers or canal boats, 10 cents each.

No lockage on boats shall be made for less than \$1.50. Cargoes must be charged for, as hereinafter indicated, in addition to lockage charge on boats.

Toll is to be computed upon the weight (1,000 pounds per mile) of all articles contained in the following list, unless otherwise stated.

Lockage at Henry and Copperas Creek to be computed upon the weight (1,000 pounds) unless otherwise stated.

ARTICLES.	THROUGH FREIGHT.	LOCAL FREIGHT.	LOCKAGE.
	Tolls in mills.	Tolls in mills.	Lockage in cents.
Barbed wire.....	3 ₄	3 ₄	3
Bark, tanner's	1	1	1 ₂
Barley.....	1 ₁₀	1 3 ₄	1 ₂
Barrels, empty.....	2 ₁₀	2	3
Beans.....	1	1	3
Bran.....	1	1	3
Buckwheat.....	1 ₁₀	1 3 ₄	1 ₂
Charcoal.....	1	1	3
Clay.....	1 ₄	1 3 ₄	3
Coal, per ton, per mile.....	1 ₂	1 ₂	3
Coke.....	1 ₄	1 ₄	3
Corn.....	1 ₁₀	1 3 ₄	1 ₂
Drainage pipe.....	1	1	3
Flour.....	1	1	3
Furniture, household.....	2	2	3
Hay and fodder.....	1	1	3
Hemp.....	1	1	3
Hoops and materials for.....	1	1	3
Hubs, boat knees and bolts.....	1	1	3
Ice.....	1 ₁₂	2	1 ₁₂
Iron, pig, scrap and railroad.....	3 ₄	3 ₄	2
Iron, wrought and cast.....	1 ₁₂	1 1 ₂	3
Iron ore.....	1	1	2
Land plaster, bone dust and super-phosphate.....	1	1	1
Lead, pipe, sheet and rool, pigs and bars.....	1	1	3
Lime, common.....	1	1	2
Lime, hydraulic.....	1	1	2
Machinery.....	2	2	3
Meal.....	1	1	3
Merchandise (including hardware, dry goods, cutlery, groceries, crockery and other articles not specified).....	1	1	3
Oats.....	1 ₁₀	1 3 ₄	1 ₂
Rye.....	1 ₁₀	1 3 ₄	1 ₂
Salt, in sacks or barrels.....	1	1 1 ₂	2
Sand and other earth.....	1 ₁₂	1 ₁₂	1
Seeds.....	1	1	3
Ship stuff.....	1	1	3
Shorts and screenings.....	1	1	3
Staves and headings.....	1	1	3
Wheat.....	1 ₁₀	1 3 ₄	1 ₂
Zinc, spelter.....	1	1	3

On the following articles toll per mile and lockage will be computed by number and measures:

ARTICLES.	THROUGH FREIGHT.	LOCAL FREIGHT.	LOCKAGE.
	Tolls in mills.	Tolls in mills.	Lockage in cents.
On each 1,000 feet of lumber.....per mile		5	5
.. 1,000 feet of dressed flooring.....		4	5
.. 1,000 feet of siding.....		2	2 ¹ / ₂
.. 1,000 lath.....		1	1 ¹ / ₄
.. 1,000 shingles.....		1 ¹ / ₂	1
.. 1,000 brick.....	2	2	5
.. 100 split posts (not over 5 in. in diameter) or fence rails.....	3	4	5
.. 500 railroad ties.....	15	20	8
† .. cord of wood for fuel.....	8	10	8
* .. cubic yard (27c. ft.) dressed or sawed stone.....	7	8	15
* .. cubic yard (27c. ft.) rubble stone...	4	5	10
* dimension stone.....	6	8	15
* macadam stone.....	2	2	9
Passengers (each round trip of 25 miles or less on canal) 2 ¹ / ₂ cents each.....			5

On lumber shipments, from Chicago to points noted below, the following rates of toll will be charged:

ARTICLES.	Lemont..	Lockport.	Joliet....	Bird's Bridge.	Channa- hon....	Morris...	Seneca...	Mar- seller..	Ottawa...	Utica....	LaSalle..	Henry & below..
	Cts	Cts	Cts	Cts	Cts	Cts	Cts	Cts	Cts	Cts	Cts	Cts
On each 1,000 feet of lumber.....	10	12	13	14	15	17	18	19	20	22	23	16
.. 1,000 feet of dressed flooring.....	8	9.6	10.4	11.2	12	13.6	14.4	15.2	16	17.6	18.4	12.8
.. 1,000 feet of siding.....	4	4.8	5.2	5.6	6	6.8	7.2	7.6	8	8.8	9.2	6.4
.. lath.....	2	2.4	2.6	2.8	3	3.4	3.6	3.8	4	4.4	4.6	3.2
.. shingles.....	1	1.2	1.3	1.4	1.5	1.7	1.8	1.9	2	2.2	2.3	1.6

"Through Freight" is that which is cleared from Copperas Creek or Henry to Chicago; or from Chicago to Henry or Copperas Creek.

"Local Freight" includes all other freight.

† Provided that on wood transported over twenty-five miles the toll shall not exceed 25 cents per cord. All timber on boats shall be taken board measure.

* Provided that on stone transported over twenty-five miles the toll shall not exceed 12¹/₂ cents per cubic yard on macadam and rubble, and 20 cents per cubic yard on dimension and dressed or sawed stone.

† Provided that on lumber cleared to the same point, 100,000 feet shall be considered a full canal boat load—all over that free of toll. Flooring, siding, lath and shingles to be figured on the same basis.

Provided that on clearances from Chicago to Copperas Creek, or from Copperas Creek to Chicago, the lockage on boat and cargo shall be one-half the above rates at each lock, provided the cargo is not transferred before reaching destination as cleared.

Provided that boats passing both locks in the Illinois river shall be charged one-half the above rates of lockage at each lock, on cargo, but shall pay the straight lockage charge on boats at each lock.

Boats entering the canal at LaSalle, and passing out again without proceeding as far as Ottawa, shall be charged \$1.00 each, if the toll on boat and cargo at above rates should not amount to \$1.00.

The weight of a box, crate, vessel or thing in which any article may be contained, shall be added to the weight of the article itself and toll computed accordingly.

Duplicate bills of lading required in all cases, one to be deposited with the collector to whom toll or lockage is paid.

Table of Weights.

Weight per Barrel in Pounds.	Weight per Bushel in Pounds.	Weight of Empty Barrels in Pounds.	Miscellaneous—Lbs.
Molasses 500	Ear corn..... 70	Flour 20	Wagon, average weight..... 900
Lard 380	Shelled corn 56	Whiskey 50	Reaper 1,200
Oil 400	Wheat 60	Pork or beef 50	Earth, per cubic yard 3,200
Whiskey, vinegar 350	Rye 56	Tierces 60	Sand, per cubic yard 3,500
Beef or pork 350	Oats 32	Kerosene..... 70	Gravel, per cubic yard 3,300
Salt..... 300	Barley..... 48		Dimension stone per cubic yard.. 4,800
Lime, hydraulic.. 300	Irish potatoes.... 60		Rubble stone per cubic yard.. 3,500
Lime, common... 200	Sweet potatoes.... 55		Wood, per cord .. 8,000
Flour 196	Salt 50		
	Salt, fine 55		
	Clover seed 60		
	Timothy seed.... 45		
	Flax seed..... 56		

N. B.—The attention of all masters and shippers is hereby directed to the following sections of the rules, by-laws and regulations of the Illinois and Michigan Canal, to-wit: Sections 55 to 63, inclusive, and the rules established for the lockage of boats at Henry and Copperas Creek

C. E. SNIVELY, President, Canton, Ill.
HOMER J. TICE, Treasurer, Greenview, Ill.
LEON McDONALD, Gen. Supt., Lockport, Ill.
HOWARD O. HILTON, Secretary, Rockford, Ill.
W. L. SACKETT, Chief Clerk and Paymaster, Lockport, Ill.

General offices, Lockport, Ill.

SIZE OF CANAL LOCKS.

Locks on the Illinois and Michigan canal admit boats of 105 feet gang, 17¹/₂ feet beam.

Draft of boats permitted on canal, 4 feet, 8 inches.

Bridges are 12 feet above the water surface.

Locks on the Illinois river at Henry and Copperas Creek are 350 feet long, 75 feet wide.

COMMISSIONERS.

Clarence E. Snively, President.....Canton, Illinois
Howard O. Hilton, Secretary.....Rockford, Illinois
Homer J. Tice, Treasurer.....Greenview, Illinois

List of Officers and Agents Employed by the Board of Canal Commissioners in 1900.

Name.	Occupation.	Compensation.	Remarks.
Leon McDonald.....	General superintendent.....	†\$2,500 00	Services began Feb. 16, 1897.
W. L. Sackett.....	Chief clerk and paymaster....	†1,200 00	.. ..
E. W. Willard.....	Assistant clerk, general office.	†1,800 00	.. ..
C. E. Thompson.....	Stenographer, general office..	†840 00	Feb. 1, 1900..
H. M. Snapp.....	Attorney, general office.....	†720 00	Aug. 1, 1896..
Chas. Stone.....	Assistant, treasurer's office..	†360 00	Nov. 1, 1899..
James Barron.....	Collector of tolls, Chicago.....	†1,200 00	May 21, 1897..
Duncan Campbell.....	Asst. collector of tolls, Chicago	†1,000 00	.. ..
W. L. Sackett.....	Collector of tolls, Lockport....	†900 00	April 22, 1896
John O'Donnell.....	.. .. Ottawa.....	†900 00	Mar. 1, 1897..
Lee R. Kinnear.....	.. .. Henry.....	†900 00	Mar. 15, 1897..
George Woodruff.....	.. .. Copperas Cr	†900 00	Mar. 1, 1897..
M. J. Carey.....	Inspector of boats, Chicago....	†900 00	April 1, 1897..
William Keough.....	Foreman repairshop, Lockport	†1,500 00	.. ..
F. X. Werling.....	.. .. Ottawa..	†1,200 00	Services began Mar. 1, 1897..
George T. Dowse.....	.. .. dredge.....	†100 00	April 1, 1897..
Chas. Dimmick.....	.. .. repair boat No. 1.....	†65 00	Mar. 1, 1897..
E. C. Smith.....	.. .. 2.....	†65 00	Sept. 1, 1897..
Samuel Shuberg.....	Locktender, lock 1.....	†35 00	Mar. 1, 1897..
*Elisha Sly.....	.. .. 2.....	†35 00	April 1, 1897..
*Gustave Seitz.....	.. .. 3 and 4.....	†70 00	Mar. 10, 1897..
*Joseph Gretza.....	.. .. 5.....	†35 00	.. ..
*Winfield Blood.....	.. .. guard lock.....	†35 00	.. ..
*J. L. Horton.....	.. .. locks 6 and 7.....	†70 00	.. ..
*John Watson.....	.. .. lock 8.....	†35 00	May 15, 1897..
*A. Hubbard.....	.. .. locks 9 and 10.....	†50 00	Mar. 1, 1897..
Frank Frost.....	.. .. side cut lock, Ot-	.. ..	.. ..
.. ..	.. .. tawa.....	†35 00	.. ..
*Mrs. Wm. Mellin....	.. .. lock 11.....	†35 00	Appointed to fill vacancy
.. ..	.. ..	.. ..	from Oct. 6, 1898.....
*Mrs. Geo. Funk.....	.. .. lock 12.....	†35 00	Appointed to fill vacancy
.. ..	.. ..	.. ..	from Feb. 17, 1898.....
*Arthur Rowley.....	.. .. lock 13.....	†35 00	Services began Sept. 1, 1899..
*James Ross.....	.. .. locks 14 and 15....	†50 00	.. .. Mar. 1, 1897..
*James McCune.....	.. .. Henry lock.....	†35 00	.. .. Mar. 15, 1897..
*Arthur Melick.....	.. ..	†35 00	.. .. Oct. 1, 1900..
*Luther Woodruff...	.. .. Copperas Creek..	†35 00	.. .. Mar. 1, 1899..

* \$25.00 per month during winter months.

† Per annum.

‡ Per month during navigation.

The offices of assistant collector of tolls at Chicago, inspector of boats at Chicago and locktender at guard lock have been abolished.

TREASURER'S REPORT.

GREENVIEW, ILL., Dec. 1, 1900.

To the Honorable Board of Canal Commissioners of the State of Illinois.

GENTLEMEN:—I have the honor to submit to you, as required by the statutes of the State of Illinois, the following report showing the receipts and disbursements of moneys received by me and paid out as treasurer of the Board of Canal Commissioners from December 1, 1899, to December 1, 1900:

To balance on hand, Dec. 1, 1899.....	\$40,242 52
Received from sundry tolls, rents, etc., as per detailed statement of commissioners.....	69,088 30
Total receipts.....	\$109,330 82
Deducting sundry disbursements, as per detailed statement of commissioners.....	88,317 60
Balance on hand Dec. 1, 1900.....	\$21,013 22

Respectfully submitted,

HOMER J. TICE,
Treasurer.

REPORT OF GENERAL SUPERINTENDENT.

GENERAL SUPERINTENDENT'S OFFICE,
ILLINOIS AND MICHIGAN CANAL,
LOCKPORT, ILL., Dec. 1, 1900.

To the Honorable Board of Canal Commissioners, Lockport, Ill.

GENTLEMEN:—I beg leave to submit herewith my annual report relative to the maintenance and repairs of the Illinois and Michigan Canal and locks and dams at Henry and Copperas Creek on the Illinois river, for the fiscal year ending November 30, 1900.

All work of an extraordinary character, indicated as necessary in my last report, has been performed with but two exceptions—the renewal of the aqueduct over the Little Vermilion river at LaSalle and the building of a new boarding boat. By dint of much patching and repairing, the old boat has been made to last through the last season, though at considerable risk. It is now being used as a work shop at the Ottawa aqueduct and will be torn to pieces when the aqueduct is completed. Although in very bad condition, I have concluded that the LaSalle aqueduct can be patched up and re-enforced so that it will last another year, and that it is best to do this by reason of the large amount of other work that it will be necessary to accomplish before the opening of navigation next spring.

During the past season the condition of the aqueduct over the Fox river at Ottawa deteriorated so rapidly as to make its renewal the coming winter an absolute necessity. The lumber for the work has been purchased and is nearly all on the ground and the work of construction will be begun next month.

There have been no delays to navigation, except such as have been caused by the work of the Sanitary District of Chicago and its failure to live up to the terms of the agreement entered into by the officers of that corporation and yourselves, under date of December 21, 1899. Under the terms of that agreement the Sanitary District was to rebuild the lock at Bridgeport, lowering the floor of the same in order to compensate for the lowering of the level of the Chicago river, which ensued upon the opening of their channel. This lock was to have been completed, ready for navigation by April 1, 1900. As a matter of fact, it was not completed until nearly six weeks later, during all of which time we were unable to open the canal for navigation, simply and solely because this lock was not ready for use. The Sanitary District also agreed to "maintain throughout the Sum-

mit level of said Illinois and Michigan Canal a navigable depth of six (6) feet of water." This it has failed to do during a great portion of the season, boats being delayed many times by reason of the insufficient depth of water on this level and oftentimes running hard aground. During the whole season the shippers have been forced to load their boats to less than their usual draft, by reason of this condition of affairs. Through its failure to fulfill its agreements, as noted above, the Sanitary District has inflicted many thousands of dollars damages to the canal during the past year by depriving it of tolls, which would otherwise have been received. Hundreds of thousands of bushels of grain have been shipped by rail that would otherwise have gone by water, and several stone quarrying firms have been compelled to almost cease business, by reason of their inability to deliver their product in the market. The insufficiency of the water supply on this level has also greatly injured the water power at Lockport, at times forcing a complete shutdown of the mills, which have hitherto derived power from this source.

In addition to the above, I desire to briefly call your attention to certain other matters in which you are interested where the Sanitary District has been lax in the performance of its obligations:

At the time the lock was constructed at Bridgeport, the channel between the lock and the Chicago River was dredged by the Sanitary District to correspond with the grade of the floor of the lock. As a result of this dredging, a long strip of dock, built by and belonging to the canal, has fallen down, leaving the banks in very bad condition. This should all be rebuilt by the Sanitary District at no expense to the canal.

There still remains much work to be done by the Sanitary District to comply with the terms of the decree of the Will County Circuit Court of the November term, 1893. The principal items of this unfinished work are the wing wall north from lock No. 5, for the protection of navigation, the completion of the excavation in the upper basin, the completion of the raising of the towpath, and the raising of the Santa Fe bridge just below lock No. 4, as well as a number of other minor matters. The attention of the Sanitary District has been drawn to these matters many times but no effort at all has been made to accomplish some of them, while other portions of the work are only partially completed. At the present time, all work in this locality has been discontinued.

As a measure of economy, several reductions have been made in the working force of the canal during the past season, the most important being at Bridgeport (where the assistant collector, inspector and one of the locktenders have been dispensed with), and at the twin locks, at Marseilles and LaSalle.

Protection from fire in the shops at Lockport has been greatly improved by laying a main to connect with the village water works system and putting in two fire hydrants at convenient points in the yards. High pressure is always maintained on the village system

and in case of a fire it is only necessary to attach the hose and open the valves to secure four fine streams of water. The village authorities make no charge for water used for this purpose.

There have been no delays to navigation other than those which I have indicated as having been caused by the Sanitary District, and no breaks in the canal embankments.

REPAIRS AND MAINTENANCE FOR THE YEAR ENDING NOV. 30, 1901.

The expenses for ordinary maintenance and repairs will probably be somewhat less for the coming year than for the one just closed. Less dredging than usual will probably be required. Under the head of "Extraordinary Expenses," will be the rebuilding of the aqueduct over the Fox River at Ottawa this winter, at an estimated cost of \$16,000.00, and the one at LaSalle, over the Little Vermilion River, next winter, at a cost of \$8,500.00, and the building of a new boarding boat, which will cost about \$1,500.00.

I desire to recommend the construction of by-passes at locks 9 and 10, at Marseilles. It has been demonstrated during the past season that the supply of water furnished by the Fox River is becoming very unreliable, the river falling so low at times that very little, if any, water can be secured from this source for canal purposes. In addition to this fact, the dam at Dayton is in such poor condition that it may give way at almost any time and thus entirely cut off the water supply from this river. Should this occur, there would be no means of maintaining water in the canal levels below Marseilles except by feeding through the locks at that point, which means would be entirely inadequate. By constructing the by-passes, which I recommend, all trouble would be obviated in case of the failure of the supply from the Fox River.

Mr. E. W. Willard, Land Agent, has accomplished some very valuable work in the way of research and compilation, the result of which he has prepared in the form of a report, which I append herewith.

Respectfully submitted,

LEON McDONALD,

General Superintendent of the Illinois and Michigan Canal.

REPORT ON LAND INVESTIGATIONS.

To the Canal Commissioners.

GENTLEMEN:—In prosecuting the search for canal lands, I have incidently found a considerable quantity of lands, the title to which appears from the Will county records to be in the State of Illinois. The history of this property is as follows: At the October term, 1862, of the Sangamon county circuit court, a decree was rendered in the words and figures as follows, to-wit:

THE PEOPLE OF THE STATE OF ILLINOIS
vs.

JOEL E. MATTESON AND MARY MATTESON

Hay & Cullom, solicitors for complainants. Referred to George W. Shutt, master in chancery; bill and mortgage on file. Amount due \$253,723.77. Sold subject to redemption April 27, 1873. Deeded December 1, 1864, to Alexander Sterne, trustee for the State of Illinois. In this connection, reference is made to the public laws of Illinois for 1863, page 77, for an act to appoint a trustee for the State of Illinois, for certain purposes. This act recites the subject matter in reference to the Matteson mortgage; appoints Alexander Sterne trustee and provides that the Treasurer of the State of Illinois shall be successor in trust. All accounts, sales, etc., to be approved by the Auditor of the State.

The land described in this deed, and not known to have been disposed of, is as follows, to-wit:

COUNTY OF COOK.

East $\frac{1}{2}$ S. E. $\frac{1}{4}$ south of Plank Road, section 23-39-13.

North $\frac{1}{2}$ N. W. $\frac{1}{4}$ and N. E. $\frac{1}{4}$ S. W. $\frac{1}{4}$ section 9-38-14.

PEORIA COUNTY.

Lots 1, 2, 3, 4, 5 and 6, block 10, Hugh M. Ginty's addition to city of Peoria.

Ten acres in a square form in S. E. corner of So. $\frac{1}{2}$ S. W. $\frac{1}{4}$ section 34, Tp. No. 9 N., R. 8, E. 4th P. M. All City of Peoria.

VERMILION COUNTY.

Undivided 3-5 of sections 23, 27 and 35, Tp. 26-9, E. 3d P. M.

Undivided 3-5 of section 17, Tp. 25, R. 9, E. 3d P. M.

ADAMS COUNTY.

Lot 8, block 16, original Town now City of Quincy.

Lots 4 and 16, Neven's addition to City of Quincy.

East $\frac{1}{2}$ of block 56, John Ward's addition to Quincy.

And a large quantity of lots and lands in the counties of Will and LaSalle. From a careful and exhaustive examination of the records of these counties, it is found that the title to the following named lots appear from these records to be now in the State of Illinois, to-wit:

WILL COUNTY.

Lots 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 and 47.

Joel E. Matteson's sub. of block 10.

Lots 24, 25, 30, 31, 36, 37, 42, 43, 48, 49.

Matteson's sub. of blocks 8 and 9, all C. T. sub. W. $\frac{1}{2}$ 15-35-10.

Lots 22-26, block 17, Bowen's addition to Joliet.

West $\frac{1}{2}$ lot 1, block 11, original Town of Joliet.

Lot 4, block 22, West Joliet.

LASALLE COUNTY.

Lots 8 and 9, block 44, City of LaSalle.

Those lots in blocks 8, 9 and 10, Will county, and lots 8 and 9 in block 44, LaSalle county, were purchased by Joel E. Matteson from the trustees of the Illinois and Michigan Canal, so that the abstract at the time of the mortgage would show as follows:

United States to State of Illinois, in 1827, State of Illinois to Joel E. Matteson, block 10, April 29, 1853, Will county records; blocks 8 and 9, July 1, 1852, Will county records; lots 8 and 9, block 44, March 16, 1859, LaSalle county records. The present claimants to the last named pieces in Will and LaSalle counties, get their title from tax sales, subsequent to date of the recording of the master's deed to Sterne. Joel E. Matteson received his title to W. $\frac{1}{2}$ lot 1, block 11, original Town of Joliet, and lot 4, block 22, West Joliet, from a tax sale and tax deed. The records of Cook, Peoria, Vermilion and Adams counties have not been examined, therefore the present condition of the title to the lands in these counties is not known.

NOT EXAMINED.

COOK COUNTY.

E. $\frac{1}{2}$ S. E. $\frac{1}{4}$ So. of Plank Road, 23-39-13.

N. $\frac{1}{2}$ N. W. $\frac{1}{4}$ and N. E. $\frac{1}{4}$ 9-38-14.

CITY OF PEORIA.

Lots 1, 2, 3, 4, 5, 6, block 10, Hugh M. Ginty's addition to Peoria.
Ten acres in a square, S. E. corner S. $\frac{1}{2}$ S. W. $\frac{1}{4}$ 34-9-8, E. 4.

COUNTY OF VERMILION.

Undivided 3-5 Section 23-27-35, in Tp. 26-9, E. 3d P. M.

Undivided 3-5 Section 17, Tp. 25, R. 9, E. 3d P. M.

Lot 8, Block 16, original Town now City of Quincy.

Lots 4 and 16, in Neven's addition to City of Quincy.

E. $\frac{1}{2}$ Block 56, John Ward's addition to Quincy.

I have been unable to secure any information from the office of the State Treasurer at Springfield regarding the records, supposed to be in that office relating to the above mentioned property.

Respectfully submitted,

E. W. WILLARD,
Land Agent.

CANAL OFFICE, LOCKPORT, ILL.

DECEMBER 1, 1900.

To the Canal Commissioners.

GENTLEMEN:—In compliance with directions received from the general superintendent, I herewith submit a report of the result of an examination of the records at Springfield, and the county seat of LaSalle county, regarding the title to the S. E. $\frac{1}{4}$ section 13, Tp. 33, N. R. 3; the N. W. $\frac{1}{4}$ of the N. W. $\frac{1}{4}$ of section 33, Tp. 34, N. R. 1, and of lot 9, block 77, LaSalle, and lot 5, block 121, LaSalle, mentioned in the report of December 1, 1899. (By a clerical error in that published report, lot 9 was placed in block 76.) The S. E. $\frac{1}{4}$, 13, 33, 3 was pre-empted by James B. Campbell, January, 1831. The Governor's records show that a patent was issued. Suit of ejectment was commenced by Commissioners Glover and others in the circuit court at Ottawa. Was decided in favor of defendants. Was carried to the supreme court of the State, where judgment of the lower court was affirmed.

The N. W. $\frac{1}{4}$, N. W. $\frac{1}{4}$, Sec. 33, 34, 1, was sold Nov. 16, 1841, (as appears from canal records) to one "Phillip Claring." Examination in Auditor's office shows that this piece was never reported for taxation, as would have been the case had the sale been consummated and final certificate issued.

By an examination of the Governor's records, I can find no mention of a patent having been issued.

I append hereto an abstract of the records of LaSalle county to November 27, 1900, and an affidavit by one Edward Fogarty bearing on this matter:

Memorandum of instruments of record in the Recorder's office of LaSalle county, Illinois, affecting the title to the N. W. $\frac{1}{4}$ of the N. W. $\frac{1}{4}$ of Section 33, Township 34 North, Range 1 East of the third P. M., the county of La Salle and State of Illinois.

Edward Burke to Thomas B. Elliott; mortgage; book 15, page 303; dated 4th of October, 1847; filed 3d of January, 1848; \$70.92; N. W. $\frac{1}{4}$, N. W. $\frac{1}{4}$, 33, 34, 1.

Edward Fogarty and wife to Mary Sullivan; mortgage; book 142, page 145; dated 10th May, 1871; filed 12th May, 1871; \$250; S. $\frac{1}{2}$, N. $\frac{1}{2}$, N. W. $\frac{1}{4}$, 33, 34, 1; 89 acres.

John Scanlon, sole heir of estate of Mary Sullivan, to Edward Fogarty and wife; release; book 198, page 526; filed 27th August, 1880; releases mortgage shown last above.

Thomas Diamond to Mathiessen & Hegeler Zinc Co.; optional contract; book 314, page 95; dated 14th July, 1892; filed 23d July, 1892. Gives right to enter on N. $\frac{1}{2}$, N. W. $\frac{1}{4}$, 33, 34, 1, and search for coal and purchase same at \$15 per acre.

Philip Cleary to Mary Ann Diamond; quit claim deed; book 181, page 618; dated 29th August, 1878; filed 27th October, 1899; N. W. $\frac{1}{4}$, N. W. $\frac{1}{4}$, 33, 34, 1.

Affidavit, book 181, page 618; dated 29th August, 1878; filed 27th October, 1899. State of Illinois, Livingston county, ss. Philip Cleary, duly sworn, states that for several years he was a resident of county of LaSalle, and such residence continued during early sales of canal lands, that on sale of canal lands in LaSalle county, Illinois, held at Lockport, affiant appeared and became the purchaser of N. W. $\frac{1}{4}$, N. W. $\frac{1}{4}$, 33, 34, 1, for \$360 at \$9.00 per acre; that at time of such sale and purchase of land, canal scrip was selling for twenty cents on the dollar, which scrip was then received and receivable at par in payment of canal lands; that affiant at that time had \$40 in gold which he converted at right aforesaid into \$200 worth of scrip which was applied upon purchase price of \$360 for payment of said land to the canal trustees, leaving unpaid balance of \$160; that at time of purchase and payment aforesaid there was issued to affiant the regular and ordinary certificate of purchase showing proper credit of amount paid; that shortly and within a few days after said purchase affiant sold said land and all his interest therein and assigned said certificate to one Michael Burke, since deceased, and said Burke afterwards sold said land and all his interest therein to one Richard Murphy whose daughter and only heir is now Mrs. Mary Ann Diamond; that affiant has stated fully all facts within his knowledge with reference to said land. Subscribed and sworn to before J. H. Funk, N. P., Livingston county, Illinois.

Ottawa, Ill., November 27, A. D. 1900.

SHERMAN LELAND & SON,
Abstracters.

Edward Fogerty claims E. $\frac{1}{2}$ N. W. $\frac{1}{4}$, 33, 34, 1.

Edward Fogerty sworn says, that in the month of April, 1842, he fenced twenty acres of this tract with a rail fence; that in the month of June of that year he ploughed ten acres of the field which he had enclosed, and planted it with corn, and has cultivated it every year since. That in June, 1847, he ploughed the remainder of the said enclosed field. He has never built or resided on said tract. He resides on the west half of this quarter section, and upon the tract claimed. There is no other improvement upon this tract of land and nobody claiming on the same except himself.

EDWARD FOGERTY.

Subscribed and sworn before me this 24th day of May, 1848.

THOS. W. HENNESSEY.

This affidavit implies that Fogerty was in possession of the N. W. $\frac{1}{4}$, N. W. $\frac{1}{4}$, 33, 34, 1, in 1841, and the abstract shows that Edward Fogerty and wife mortgaged to Mary Sullivan, May 10, 1871. Mortgage released August 27, 1880, implying Fogerty in possession in 1871. The affidavit of Philip Cleary states that he assigned the original certificate to one Michael Burke and that Burke sold to Richard Murphy. In the canal records the name of "Cleary" does not appear.

The records in the Auditor's office and the Governor's records are equally silent regarding lot 9, block 77, and lot 5, block 121, town of La Salle. The records of La Salle county do not show that the title to these lots ever passed from the canal commissioners.

The title to nearly all of the vacated streets in Joliet and to a portion of the 4.40 acres N. W. corner of N. W. $\frac{1}{4}$, S. E. $\frac{1}{4}$, 9, 35, 10, has been cleared up by the adjacent property owners and occupants and liberal amounts realized from the sale thereof.

The balance of the property mentioned in the report of December, 1899, remains in substantially the same condition. Abstracts and other evidence have been secured and are on file in this office, relating to a portion of the Chicago claims, a portion of which it was not believed at the last report could be found.

I made a careful examination of the bed and reserve along the line of the old Kankakee feeder, and find approximately about 100 acres of land in which the State has an interest. The property owners would be glad to purchase the State interest in this old feeder. A considerable sum could be realized from its sale and a source of much annoyance to the farming community along the line removed. I have not been able to carefully examine other sub-divisions and the canal sections through which there are running streams, for fractional pieces similar to the one found in the S. W. $\frac{1}{4}$ of sec. 9, 33, 9, east.

In townships 34, 35, N. R. 9, E. 3rd P. M., there is about eighteen acres of land once used as a bed of a pond and feeder to the canal, situated about three miles east of locks 6 and 7 at Channahon. It is also probable that a reasonable amount could be realized from the sale of this property and a source of annoyance removed from the owners of abutting property.

Respectfully submitted,

E. W. WILLARD,
Land Agent.

Documentary history of the Illinois and Michigan Canal from 1822 to 1848, including documents and public records of later date showing the present condition of the 90-foot reserve—the 16-foot (tow path) reserve along portions of the south branch of the Chicago river, and all laws, charters, ordinances and other information obtainable from 1830 to 1856, relating to the Canal Commissioners' sub-division of the south-half of section 9, township number 39 north, range 14 east of the 3d P. M. (original Chicago) and the vacant space left by the Canal Commissioners of 1830 for public use along the margin of the Chicago river in this sub-division.

CANAL OFFICE, LOCKPORT, ILL.

DECEMBER, 1, 1900.

Board of Canal Commissioners Illinois and Michigan Canal.

GENTLEMEN:—By direction of your honorable board, given soon after you took possession of the records and canal property in 1897; I was requested by the general superintendent of the Illinois and Michigan canal, to make an investigation of all documents which could be found in the canal office at Lockport, and all public records and documents at the State capitol at Springfield, Illinois, for the purpose of securing documentary evidence, which, with records of the office, would establish the ownership of the State of Illinois to the ninety-foot reserve on each side of the canal through the sections of land which were not included in the grant of 1827, and also to discover, and if possible recover to the State of Illinois all lots, pieces and parcels of land which had been lost to the State of Illinois, owing to the fact that the trustees who had charge of the State property from 1843 to 1871, made no schedule of unsold pieces and parcels, when at the expiration of their trust, they re-conveyed to the State of Illinois all canal property remaining under their control.

I now have the honor to submit the following as the facts and result of my investigation:

Pages 60 to 214 inclusive, contain all the documentary evidence that can be found relating to the history of the Illinois and Michigan canal, from 1822 to its final completion, and the passage of the first boat in 1848.

Pages 214 to 228 inclusive, contain all the evidence that pertains to the Fox river feeder, the Kankakee feeder, the DuPage feeder, and the Calumet feeder.

Pages 229 to 249 inclusive, contain all that pertains to the present status of the State's title to the ninety-foot reserve on either side of the canal and feeders, and to the lots and pieces and parcels of land, the title to which appears, by the records, never to have legally passed from the State of Illinois.

Pages 249 to 269 inclusive, refer to the town and city of Chicago from 1830 to 1856—the wharfing privileges and various other matters of interest to Chicago property owners.

In 1822, the Congress of the United States passed an act entitled an act to authorize the State of Illinois to open a canal through the public lands to connect the Illinois river with Lake Michigan, which act provided that the State of Illinois be authorized to survey and mark through the public lands of the United States the route of a canal connecting the Illinois river with the southern bend of Lake Michigan, and that ninety feet of land on each side of said canal shall forever be reserved from any sale to be made, and the same is hereby vested in the said State, for a canal and for no other purpose whatever.

Conditioned: That if said State does not survey and direct by law said canal to be opened and return a complete map thereof to the Treasury Department within three (3) years from and after the passage of this act, or if said canal be not completed suitable for navigation within twelve (12) years thereafter, or if said grant shall ever cease to be occupied by and used for a canal suitable for navigation, the reservation and grant hereby made shall be void and of none effect.

Further: That said canal shall be and forever remain a public highway for the use of the government of the United States, free from all toll or charge whatever for any property of the United States or any person in their service passing through the same.

In 1827, the Congress of the United States passed another act which granted to the State of Illinois, subject to the disposal of the Legislature of said State a quantity of land equal to one-half ($\frac{1}{2}$) of five sections in width, on each side of said canal from one end of the canal to the other, for the purpose of aiding the State in opening the canal to unite the waters of the Illinois river with those of Lake Michigan, reserving however each alternate section to the United States. The said canal to be commenced within five (5) years and to be completed within twenty (20) years.

Further: Provides that so soon as the route shall be selected and agreed upon by said State, it shall be the duty of the persons authorized to construct said canal to examine and ascertain the particular sections to which the State shall be entitled.

In 1833, the Congress of the United States passed an act permitting the State of Illinois to construct a railroad instead of a canal and extending the time for the commencement and completion five years. Under the act of 1827 the State secured each and every odd numbered section and the United States reserved from the grant each and every even numbered section. Therefore, in order to establish the absolute title in and to the ninety-foot strip through the sections known as even sections, it became necessary:

First, to produce evidence that the various conditions of the act of 1822 had been complied with except that portion which required the canal to be completed within twelve years.

Second. To connect the act of 1822 with the acts of 1827 and 1833 in order to secure the extensions of time for the completion of the canal as provided in these several acts.

February 14, 1823, the General Assembly of Illinois passed an act to provide for the internal navigation of this State. This act named Emanuel West, Erastus Brown, Theophilus A. Smith, Thomas Sloo, Jr., and Samuel Alexander a board of commissioners to carry into effect the act of Congress of 1822. This act provides that it shall be the duty of the commissioners to cause that part of the territory of this State which may lie upon or contiguous to the probable course and ranges of the said canal to be explored and examined for the purpose of fixing and determining the most proper and eligible route, and to cause all necessary surveys and levels to be taken, field books and drafts thereof to be made. This board of commissioners employed Justus Post and Rene Paul, civil engineers, who explored and examined the

country between the Illinois river and Lake Michigan. They surveyed the route, executed a map thereof. A copy of this map is now among the files of the canal office at Lockport and is known as the Post and Paul map. Is endorsed date A. D. 1824, and inscribed as follows: "Map of that part of the State of Illinois through which it is contemplated to construct a canal. By Post and Paul." See exhibit A.

I found among the files of the office of the Secretary of State at Springfield, Illinois, and procured certified copies of the following documents which bear upon this matter and this, together with other important matter was made the basis of legal proceedings instituted by your honorable board in the Circuit Court of LaSalle county for the purpose of establishing and settling the title to the ninety-foot reserve through all even sections of land the entire length of the canal. This suit was prosecuted through the circuit and supreme courts of this State and is now pending in the United States Supreme Court at Washington, D. C.

The Canal Commissioners of the State of Illinois.

To JUSTUS POST, Dr.

For 54 days' services exploring and examining the country between the navigable waters of the Illinois river and Lake Michigan, on the route of the contemplated canal, in the autumn of 1823, at \$6 per day.....\$324 00

Received, December, 1823, of the Canal Commissioners, payment in full of the above account. JUSTUS POST.

NOTE.—Receipts for the above sum having been before given to F. W. Smith and E. J. West, Esquires, which receipts have not been returned to me. JUSTUS POST.

We do hereby certify that the above account is just and in conformity with an agreement with the commissioners.

E. J. WEST,
ERASTUS BROWN,
T. W. SMITH,
Commissioners.

Received, Edwardsville, 6th August, 1824, of Major T. W. Smith, of the Board of Canal Commissioners of the State of Illinois, two hundred and fifty dollars in the paper of the State Bank of Illinois, on account of services rendered as engineer to said board, which said advance, if not approved of by the board, is to be refunded on demand by me. JUSTUS POST.

Dollars \$250.00.

The Canal Commissioners of Illinois.

To EDMUND WEED, Dr.

1824
Nov. 24th, To forty-two days' work as a hand in taking levels, at \$10 per month.....\$14 00

CR.

By 1 pound powder.....	\$.62	2
By 1 pound lard.....	.12	2
By salt.....	.25	
Received payment in full of Erastus Brown, Fort Clark, November 24, 1824.		
By account.....	\$6	50
Deduct for barrow.....	3	75
Cash for Stephens.....	75	
For Snow.....	1	25
	\$5	75

Balance paid Weed..... 75

The Canal Commissioners.

To	ELIJAH HYDE,	Dr.
1824		
Nov. 24,	To forty-two days' work as pole man in taking levels, at \$15	
	per month.....	\$21 00
	To two pair horse hampers.....	75
		<u>\$21 75</u>

Received payment in full. Fort Clark, Nov. 24, 1824.

ELIJAH HYDE.

The Canal Commissioners of Illinois.

To	LOUIS CHEVALIER,	Dr.
To	forty-three days' work as a hand and interpreter in taking levels	
	for the canal, at \$18 per month, is.....	\$25 80
Received,	Fort Clark, November 23, 1824, payment in full for the above.	
	his	
	LOUIS CHEVALIER.	
	x	
	mark.	

Attest: R. PAUL.

The Canal Commissioners of Illinois.

To	PETER DU MONT,	Dr.
1824		
Nov. 23d,	To forty-three days' work as chain man at \$13 per month....	\$18 63
	Cr.	

By sundries of Mr. Crafts as per his bill.....	\$4 00
	<u>\$14 63</u>

Received payment in full of Erastus Brown, Fort Clark, Nov. 24, 1824.
PETER DU MONT.

Balance above.....	\$14 63
To Ogee	\$4 43
" Hamlin.....	5 38
" Keyes.	62 10 43
	<u>\$4 20</u>
Bal. actually paid.....	\$4 20

Illinois Canal Commissioners.

To	B. M. STEPHENSON,	Dr.
For services	as pole carrier in taking levels, 75 days at 15 drs. per	
	month.....	\$37 50

Supra—Cr.

By cash to self.....	\$0 25
By Joseph Ogee.....	50
By order favor P. Mason.....	13 33 ¹ / ₃ 14 08 ¹ / ₃

Balance	\$23 41 ¹ / ₃
Paid to Hamlin.....	75
	<u>\$22 67</u>

Canal Commissioners for the State of Illinois.

To	B. P. SNOW,	Dr.
For services for pole carrier.....		\$40 00
" Edmund Reed.....		1 25
		<hr/> \$41 25
<i>Supra</i> —Cr.		
By sundries bought at the public sale of the remaining articles used in the expedition.....		\$ 4 94
Balance due.....		<hr/> \$36 31

ALVON, Dec. 4, 1824.

The Canal Commissioners.

To	WYLLYS THOMPSON,	Dr.
To seventy-five days' work as a chainman and boatman in taking the levels, making surveys, etc., for the Illinois canal, at the rate of ten dollars per month.....		\$25 00
Received payment in full for the above.		

WILLIS THOMPSON.

State of Illinois, to Erastus Brown, Dr.

To services as canal commissioner under and by virtue of an act entitled, "An act to provide for the improvement of the internal navigation of this State," approved Feb. 14, 1823, viz:

Two days at Vandalia in organizing the Board of Canal Commissioners, and in adopting measures to procure an engineer.

Three days at Edwardsville when Mr. Lockwood was deputed to procure an engineer in the State of New York.

Two days at Edwardsville when Mr. Lockwood's letter was received, in consulting on the expediency of engaging Col. Post or some other person as an engineer.

One day at Alton in contracting with Col. Post.

One day at Mr. West's in making arrangements to procure provisions, etc., preparatory to the exploring trip.

One day at Edwardsville at a meeting of the board to consummate the contract with Col. Post and for other purposes preparatory to the tour.

One day at Edwardsville to consult Mr. Smith as to the price to be given to hands.

Ten days in hiring men, purchasing horses and other articles necessary to be used in our exploring tour and in making other preparations for the journey.

Three days in going to St. Louis after Col. Post and to exchange money.

Forty-nine days on an exploring tour to Chicago.

Two days at Edwardsville after our return from Chicago in adjusting the accounts of our expenditures while exploring and to procure money to pay those accounts and to pay the hands.

Three days in liquidating and settling accounts with the hands and paying the same.

Seventy-nine these days services were performed in the year 1823.

One day at Edwardsville to consult whether to send after Mr. Sloo and relatively to what should be done by the commissioners.

Two days afterwards when Mr. Sloo was at Edwardsville.

Three days again when Mr. Sloo, Col. Post and Paul were there.

Sixteen days in procuring provisions, etc., engaging hands, purchasing and getting in readiness a boat, going to Edwardsville after money and then to St. Louis to exchange the same and to see Cols. Post and Paul, and sending an express after Col. Post.

Sixty-two days on the tour of leveling and surveying to Chicago.

Seventeen days in settling with hands; preparing to sell and selling the baggage and other property used by the commissioners, engineers and other men in performing the work assigned to them; in settling and collecting in part the accounts of sale; and in going to St. Louis on business of the commissioners.

Thirty-five days in going to Vandalia to make, in conjunction with other commissioners, a report of our proceedings as commissioners as aforesaid, to the General Assembly; in having our accounts liquidated and settled by the Legislature and subsequently by commissioners appointed by that body for that purpose; and

Ten days may be added; the time that will necessarily be required in returning from Vandalia in exchanging money; in completing settlements and payments to the hands; and in procuring the tents, poles, camp kettles, etc., which have been loaned from the general government, to be repaired, cleaned and returned to St. Louis, from whence they were received.

Two hundred twenty-five total.

VANDALIA, JAN. 23, 1825.

ERASTUS BROWN.

COPY.

Resolved, By the House of Representatives that the Governor of this State be requested to communicate to this branch of the General Assembly all the information he has in his possession from the Department of the Secretary of War relative to the surveying and examination of the route of the proposed canal to connect the waters of Lake Michigan with the Illinois river.

DECEMBER 1828.

WM. L. D. EWING,

Clerk House of Representatives.

We have received from the office of Secretary of State of the State of Illinois the following described papers relating to the survey and location of the route for the Illinois and Michigan canal, to wit:

No. 1. Field notes and observations taken in leveling the route for the contemplated canal, to connect the waters of Lake Michigan with the Illinois river.

No. 2. Sketch of the Chicago river from its mouth to Wilmots.

No. 3. Vertical section of a route traced to ascertain the difference of level between the Little Vermillion and Lake Michigan.

No. 4. Sketch of the mouth of the Chicago river, relative to the projected moles.

No. 5. Map of that part of the State of Illinois through which it is contemplated to construct a canal.

No. 6. Pamphlet printed containing the report of Canal Commissioners published in 1825.

C. JAYNE,

Canal Commissioner.

The Commissioners will please sign the above receipt and return it.

Endorsements:

ALEXANDER P. FIELD,

Secretary of State, Vandalia.

VANDALIA, SEPT. 23, 1829.

Received of the Secretary of State for the use of the commission appointed by the General Assembly at the session of 1828 and 1829 for the purpose of locating and extending the canal route from the Lake of Michigan to the falls of the Illinois river, the map of the surveyed lands lying on said route, and the profile of the survey made by the former commissioners appointed to locate said route.

ELIJAH ILES.

Certified copies of pages 10, 14 and 26, of House Journal of 1824 and 1825, pertaining to message of Governor Coles and action thereon, in substance as follows:

Tuesday, November 16, 1824.

The Governor's message was taken up and read as follows:

"The report which will be made to you by commissioners appointed by the last Legislature to have surveys and estimates made of the expenses of opening a navigable communication between Lake Michigan and the Illinois river, will doubtless enable you to understand the subject and judge when and in what manner you can best execute that great and desirable work. I still cherish the belief that under a judicious system this, as well as the other important measure, of opening, in coöperation with Indiana, the navigation between Lake Erie and the Wabash, may be accomplished in much less time than has been supposed. Our revenue is yearly increasing, and although when the currency recovers its value it will be proper to reduce the taxes, yet from the unusually large amount paid by non-resident proprietors of military bounty land and the number and value of the salines, the revenue of Illinois will, for many years to come, be great in proportion to its population.

"The following resolutions were adopted:

"4th. Resolved, that so much of the Governor's message as relates to the opening of navigable communication between the Great Lakes and the Wabash and Illinois rivers, so much thereof as relates to the establishment of a fund for internal improvements * * * be referred to the Committee on Internal Improvements."

Certified copies of pages 32, 36, 37, and 51, of House Journal for 1824 and 1825, pertaining to memorial to Congress, in reference to canal, and action of House thereon.

Page 32, under date of November 20, 1824, as follows:

"On leave being given Mr. Russell presented a memorial to the Congress of the United States, soliciting a grant of land of the depth of one section on each side of the canal proposed to be opened between Lake Michigan and the Illinois river, which was read, and on motion of Mr. Hanson, laid on the table.

"On motion of Mr. Kane, the House agreed to reconsider the vote."

Page 36 of said journal, under date of November 22, 1824, is as follows:

"On motion of Mr. Moore, the memorial presented by Mr. Russell to the Congress of the United States, soliciting a grant of land of the depth of one section on each side of the canal proposed to be opened between Lake Michigan and the Illinois river, was taken, and on motion of Mr. Hanson, referred to a select committee."

"Ordered, that Messrs. Hanson, McGahey and Norton be that committee."

Page 37 of said journal, under date of November 23, 1824, as follows:

"Mr. Hanson, from the select committee to which was referred the memorial to the Congress of the United States, soliciting a grant of land, one section in depth, on each side of the canal proposed to be opened between Lake Michigan and the Illinois river, reported the said memorial with the following amendments, to-wit: In the 14th line strike out the words '*proceeded to appoint*,' and insert '*appointed*;' in the 26th, 27th and 28th lines, strike out the words '*that it may be done at a very moderate expense*,' and insert '*with the assistance of Congress may be carried into effect*.'"

"The report was read and concurred in. The memorial as amended was then adopted by the House.

"Ordered, that the clerk inform the Senate thereof, and ask their concurrence therein."

Page 51 of said journal, under date of November 27, 1824, is as follows:

"A message from the Senate, by Mr. West, their secretary:

"Mr. Speaker:—I am directed by the Senate to inform the House of Representatives, that they have concurred in the report of the joint committee appointed to address General LaFayette. That they have also concurred in the memorial adopted by the House of Representatives, soliciting the Congress of the United States for a grant of land of one section in depth on each side of the canal proposed to be opened between Lake Michigan and the Illinois river."

Certified copies of pages 227, 228, 229, 237 and 259, of House Journal of State of Illinois for 1824 and 1825, pertaining to report of canal commissioners and action thereon.

Page 227, under date of January 8, 1825, as follows:

"On motion of Mr. Hamilton, the report of the canal commissioners was taken up and referred to the Committee on Internal Improvements."

Page 229, under date of January 10, 1825, as follows:

"Mr. Hamilton, from the same committee, to which was referred the report of the canal commissioners and accompanying documents, reported a bill entitled, 'An act to incorporate the Illinois and Michigan Canal Company,' which was read the first time, and, on motion of Mr. Hamilton, read the second time by its title. On further motion of Mr. Hamilton, ordered, that said bill be referred to a committee of the whole House for today."

Page 237, under date of January 10, 1825, as follows:

"On motion of Mr. Hamilton, resolved, by the House of Representatives (the Senate concurring therein), that the Executive be, and he is hereby authorized and required to forward to the President of the United States a copy of the canal commissioners' report with maps thereto annexed, and also to forward to our members in Congress a copy of said report."

Page 259, under date of January 12, 1825, as follows:

"A message from the Senate by Mr. West, their secretary:

"Mr. Speaker:—The Senate have concurred in the adoption from the House of Representatives, authorizing the Governor to employ a competent person to examine and investigate the branch bank at Shawnee Town as amended by them, in which they ask the concurrence of the House of Representatives. They have concurred with the House of Representatives in the adoption of the resolution authorizing and requiring the Executive to forward to the President of the United States a copy of the canal commissioners' report, with maps thereto annexed, and to forward to our members in Congress copies of said report."

On January 13, 1825, an act of the General Assembly of the State of Illinois, heretofore passed, entitled, "An act making appropriations for the years 1825 and 1826," was duly amended by the said General Assembly by adding thereto the following sections:

"Section 6. That the sum of two thousand eleven dollars and thirty-one cents (\$2,011.31) be and is hereby appropriated to and for the actual expenditures made and liabilities incurred by the canal commissioners, to be paid to the order of a majority of the said commissioners at any time after the first day of January next.

"Section 7. That Erastus Brown, one of the canal commissioners appointed by the last General Assembly to examine, survey, etc., the route for the canal between the waters of Lake Michigan and Illinois river, be paid the sum of three dollars and thirty-five cents per day for each day by him em-

ployed in that service; the number of days to be ascertained by his own oath, endorsed on his account for services to be filed with the Auditor before obtaining his warrant."

On January 17, 1825, the General Assembly of the State of Illinois passed an act to incorporate the Illinois and Michigan Canal Company, entitled "An act to incorporate the Illinois and Michigan Canal Company."

(This act is set out on record pages 25-32.)

On January 18, 1826, the Senate and the House of Representatives of the State of Illinois adopted a memorial to the Congress of the United States, which said memorial was thereafter and during said month of January, 1826, transmitted to and received by the Congress of the United States, which memorial was and is in the words and figures following, to wit:

"To the Honorable, the Senate and House of Representatives of the United States of America in Congress assembled:

The memorial of the General Assembly of the State of Illinois respectfully represents, that the construction of a canal uniting the waters of Lake Michigan with the Illinois river, will form an important addition to the great connecting links in the chain of internal navigation, which will effectually secure the indissoluble union of the confederate members of this great and powerful Republic. By the completion of this great and valuable work, the connection between the north and the south, the east and the west, would be strengthened by the ties of commercial intercourse and social neighborhood, and the union of the states might bid defiance to internal commotion, sectional jealousy, and foreign invasion. All the states of the Union would then feel the most powerful motives to resist every attempt at dissolution. To effect so great and desirable an object your memorialists believe to be of sufficient importance to engage the attention and awaken the munificent patronage of a government whose principle of action is the promotion of the general welfare. Your memorialists are sensibly alive to the spirit of improvement that manifests itself in almost every section of our extensive country and would fain lend a helping hand in so great and good a cause; their situation however, forbids their doing much without the aid of the federal government into whose treasury almost all the funds, whether brought hither by emigrants or earned by the industry of their citizens are paid for the purchase of the public lands. While this state of things shall continue and the money thus paid into the treasury of the Union is taken out of our State our people will not be able to engage in the glorious work of improving our common country. Ought the people of this State to stand by with folded arms and behold the great work of internal improvement progress in other states without making an effort to improve their own condition and at the same time advance the interests of our beloved country. A condition thus paralyzed is at war not only with our interests but with the best feelings of our hearts. Did this State possess the public domain lying within its bounds, as in the case of the older members of this confederacy, your memorialists would not appear before your honorable body to solicit aid in this important work. If, as your memorialists believe, the construction of this canal would be highly beneficial to the Union at large, if the receipts into the treasury of the United States would be augmented by the increasing sales of public lands; and if the interest of this State would be also advanced thereby, it is unreasonable to apply to a paternal government for assistance in the promotion of such beneficial ends. It is unnecessary for your memorialists to enlarge on the great advantages of this canal to the Union, in the facilities to be afforded in the event of war, either with the Indian tribes inhabiting our frontier or the British nation. Your honorable body is aware that this State is situated on the borders of an Indian country filled with numerous tribes of the sons of the forest. If our country should again be engaged in war the saving of expense in the transportation of munitions of war would alone defray the expense of the contemplated canal and justify the United States in making a liberal appropriation for its construction.

Your memorialists do not, however, ask your honorable body to appropriate money out of the treasury to aid them in this work, they only ask for

a tract of land, through which the contemplated canal may pass, and which, for a series of years, will be wholly unproductive to the government, unless the canal shall be commenced under auspices favorable to its completion; in which event all the land in the vicinity would immediately become available to the United States. Your memorialists sincerely believe that a liberal appropriation of land for this object would, even in a pecuniary point of view, be of immense importance to the treasury of the Union. The public lands in the vicinity would not only sell, but at a considerable advance upon the minimum price. Should this opinion be correct (and does not experience justify it) the United States would be gainers by the proposed donation to the State. Your memorialists further state that at their last session they passed an act of incorporation upon very liberal terms, authorizing a company to construct the projected canal; but the remoteness of the country from the residence of capitalists has prevented them from engaging in the work. At their present session your memorialists have repealed the charter and their only hope of soon beginning the work depends upon the liberality of your honorable body. Your memorialists have caused the route to be explored and estimates to be made of the probable expense of the work, from which it appears that the cost of constructing the canal will not be less than \$600,000.00 and may possibly amount to \$700,000.00. To the end, therefore, that your memorialists may be enabled to commence and complete this great and useful work, we pray your honorable body to grant to this State the respective townships of land through the contemplated canal may pass; the avails of which to be appropriated exclusively to the construction of said canal upon such terms and conditions as to your honorable body may seem proper.

DAVID BLACKWELL,
Speaker of House of Representatives.

RAPHAEL WIDEN,
Speaker of the Senate, pro tem."

Certified copies of pages 40, 41 and 42 of Senate Journal of Illinois, for 1826, pertaining to communication from the Canal Company, of January 13, 1826.

"To the Senate and House of Representatives of the State of Illinois:

In compliance with the provision of the charter which requires the company to make to every session of the General Assembly, a report of the expense incurred, the undersigned president and directors of the Illinois and Michigan Canal Company, report that they have expended the sum of \$98, in printing and distributing a number of the pamphlets containing the reports of the canal commissioners and engineers, and the law incorporating the company; together with a map delineating the route of the proposed canal. The undersigned think proper to add an explanation of their conduct, and for the information and consideration of the General Assembly, that immediately on the passage of the law incorporating the company, the directors organize their board and cause to be printed the pamphlets above referred to, and distributed them extensively, accompanied in many cases, by letters from the directors, to persons, who it was thought, might be induced to subscribe to the company, or in any manner be inclined to promote the great object for which it had been incorporated. It was not deemed expedient to go to the expense and trouble of opening books for subscription to the company until the necessary information contained in the pamphlets, should be furnished and the opinion and disposition of capitalists ascertained. From the information which has been received it is not believed that the stock could have been disposed of during the last year; nor is it believed that it can be disposed of for several years to come, unless Congress will make a donation of land; but with a reasonable grant, the directors are of opinion the stock will be subscribed and the canal promptly executed, by the capitalists of the Atlantic States.

"Presuming that the object the General Assembly had in view in incorporating a company, was to have the work immediately undertaken, and not believing that this can be done without a donation of land, which it is thought Congress would be more willing to make to the State than to the company; and believing also, that the charter is defective in many respects, the undersigned president and directors having no interest other than that common to the community, nor motive for accepting or continuing in their agency than a desire to render a public service, are unwilling to be a barrier to the representatives of the people, after having had an opportunity of conferring with their constituents and giving the subject all the consideration which its importance requires, from pursuing such course as they may deem best; and therefore, the president and directors respectfully return their charter to the hands from whence they received it, in order that the act may be revised. And they hereby give their assent to such alterations, or even abrogation of the charter, as the General Assembly in its wisdom may deem best calculated to promote the interests of the State."

(Signed.)

On January 20th, 1826, the General Assembly of the State of Illinois passed an act repealing the act incorporating the Illinois and Michigan Canal Company, which act was and is in the words and figures following, to-wit:

"An act to repeal an act to incorporate the Illinois and Michigan Company, and for other purposes.

"Whereas, the persons named in the first section of an act entitled 'An act to incorporate the Illinois and Michigan Canal Company' have not performed any act by which the right of the General Assembly to repeal their charter could be taken away, and whereas, it is believed that the highly important object of the above cited act can be promoted with greater advantage to the public by having the contemplated canal constructed under the direction of the State; therefore,

"SECTION 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly:* That the act entitled 'An act to incorporate the Illinois and Michigan Canal Company,' approved January 17, 1825, and the act entitled, 'An act to provide for the improvement of the internal navigation of this State,' approved February 14, 1823, be and the same are hereby repealed.

"Section 2. *Be it further enacted,* That it shall be the duty of the Governor of this State to endeavor to ascertain the best terms on which teams can be obtained on behalf of the State, for the purpose of constructing a canal from Lake Michigan to the Illinois river, and to report the same to the General Assembly at their next session."

Certified copies of pages 273, 274, 275 and 276 of Senate Journal of Illinois for 1836 and 1837, pertaining to report of committee on canal and canal lands upon bill for relief of Rene Paul and others, in substance as follows:

MONDAY, January 23, 1837.

"Mr. Thomas, from committee on canal and canal lands, reported following facts in relation to subject matter of the bill:

"Five persons were appointed a Board of Commissioners, to adopt measures requisite to effect communication by canal and locks between the navigable waters of the Illinois river and Lake Michigan and were authorized to employ an engineer and such other persons as might be necessary to discharge the duties imposed upon them.

"They were also authorized to cause that part of the territory of the State which may lie upon or contiguous to the probable courses and ranges of said canal, to be explored and examined for the purpose of fixing and determining the most eligible and proper route for the same; and to cause all necessary surveys and levels to be taken, and accurate maps filed, and books and drafts thereof to be made.

"They were also required to make a report to the next session of the General Assembly, or to an extra session: *Provided,* the Governor should commence the same under the powers here granted.

"The board employed Justus Post and Rene Paul as engineers, who made an experimental survey and estimates of costs, etc.

"Post was paid for his services; Paul was not. And the question is now presented—shall he be paid?

"The fact that he was employed and devoted his time to the service of the State, appears from the report of the Canal Commissioners made to the General Assembly in 1825.

"The time of his employment has been proven to be 120 days—the amount claimed is four dollars per day. To the committee, the question is plain that the claim ought to be allowed."

Certified copy of act of the General Assembly of March 4th, 1837:

"An act for the relief of Rene Paul and others."

Section 1. Be it enacted, etc.. That the Auditor of Public Accounts is hereby directed to issue his warrant on the Treasurer of the State to be paid from the canal fund, in favor of Rene Paul, for the sum of four hundred and eighty dollars, being the sum of four dollars per day, to be paid to him for the time actually employed in the service of the State, under its authority, as engineer in surveying and delineating the canal route from Lake Michigan to the Illinois river, in the years 1823 and 1824.

Section 2. There shall be paid to John Waddel the sum of \$45, for a boat furnished, and \$40 for work and labor done for the canal commissioners, in 1823 and 1824; also to Willis Thompson, Elijah Thompson, Andrew Waddel, and J. Watson, the sum of twenty-four dollars each, and to Lewis Bailey the sum of fifty-six dollars for services rendered the said canal commissioners, which shall be paid in full for all services rendered, to be paid out of the canal funds, as provided in the first section of this act.

Approved 4th March, 1837.

On September 23, 1829, the canal commissioners appointed under the act of January 22, 1829, by their agent and representative, Elijah Iles, obtained from the Secretary of State, the certain map of the route of the Illinois and Michigan canal, made by J. Post and R. Paul and executed a receipt therefor, in the words and figures following:

VANDALIA, Sept. 23, 1829.

"Received of the Secretary of State for the use of the commissioners appointed by the General Assembly at the session of 1828 and 1829, for the purpose of locating and examining the canal route from Lake of Michigan to the falls of the Illinois river, the map of the surveyed lands lying on said route, and the profile of the survey made by the former commissioners appointed to locate said route.

ELIJAH ILES."

Copy of letter from Governor Edwards to the Secretary of War.

"EXECUTIVE DEPARTMENT STATE OF ILLINOIS,

28th January, 1828.

SIR:—As the Legislature of this State will, doubtless, at its next session, make provision for commencing the canal, to connect the waters of the Illinois river and Lake Michigan, I beg leave, on behalf of the State, to request that a survey of a proper route for it may be made by some competent officer or officers, of the Engineer Department of the United States.

A survey has already been made under the authority of this State, but as the engineers employed were without the benefit of that practical experience, which the great importance of the object should command; and as the United States, retaining every alternate section of land through which the canal is to pass, have a direct interest in its judicious execution, in reference to the public domain; the measure solicited seems not less demanded by the interest of the United States, than to this State, and therefore I permit myself to hope it will be adopted.

I will only add, that if this request can not be granted in the course of the present year, it will be too late to do it at a future period, because, after its next session, our Legislature will not again sit for two years, before which time I have no doubt the work will have progressed too far to admit of a change which might previously be ascertained to be advisable.

I have the honor to be etc., etc.

NINIAN EDWARDS.

The Honorable James Barbour,
Secretary of War."

Copy of a letter from the Secretary of War to Governor Edwards

"WAR DEPARTMENT,

February 18, 1828.

SIR:—I have the honor to acknowledge the receipt of your letter of the 28 of last month, stating that as the Legislature of the State of Illinois will, at its next session, make provision for commencing the canal to connect the waters of the Illinois river and Lake Michigan, you request, on behalf of the State, that a survey of a proper route for the canal may be made by some competent officer, or officers, of the Engineer Department of the U. States, and particularly setting forth the interest which the U. States have in its judicious execution in reference to the public domain.

The canal is one in which the United States are highly interested, both as it regards the increased value which it would give to the public lands, and the convenience and facility which it will afford in a military point of view in communicating and moving the means of defense from the Lakes to the Mississippi, and from the more settled country to the Lakes. It would therefore afford the department much pleasure in complying with your request, if it shall be in its power to do so, and should Congress place the means at its disposal, an officer or other engineer will be directed in due season to fulfill the desire of the State over which you preside.

With great respect, I am, sir, your most obedient servant,

JAMES BARBOUR.

To his Excellency, Ninian Edwards, Gov'r of Illinois."

"*To the House of Representatives:*

In compliance with a resolution of the House of Representatives requesting all of the information in the possession of the Governor from the Department of the Secretary of War relative to the surveying and examination of the route of the proposed canal to connect the waters of Lake Michigan with the Illinois river, I herewith transmit to the House copies of all the correspondence in the executive department on that subject.

NINIAN EDWARDS.

December, 1828."

On January 22, 1829, the General Assembly of the State of Illinois passed an act entitled, "An act to provide for constructing the Illinois and Michigan canal."

"Section 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly:* That the Governor shall biennially nominate, and, by and with the advice and consent of the Senate, appoint three commissioners, whose duty it shall be to consider, devise and adopt such measures as may be required to facilitate and effect the communication by means of a canal and locks, between the navigable waters of Illinois river and Lake Michigan, and in case of the death, resignation or refusal to act, during the recess of the Legislature, of either of said commissioners, the vacancy thereby occasioned shall be filled by the Governor.

"Sec. 5. It shall be the duty of the canal commissioners, as soon as practicable after the passage of this act, to cause those parts of the territory of this State which is upon, or contiguous to, the probable course or range of said canal, to be explored and examined for the purpose of fixing and determining the most proper and eligible route for the same; and, to cause all necessary surveys and levels to be taken, and accurate maps, field books, and drafts thereof to be made; and as soon thereafter as they may be able to command sufficient funds, and deem it expedient, shall commence the work, by opening a canal, and constructing locks, aqueducts, and dams, and embankments, to effect a navigable communication between Lake Michigan and the Illinois river.

"Sec. 11. The canal contemplated by this act shall have the following dimensions, to-wit: At least forty feet in width at the summit water line, twenty-eight feet wide at the bottom, and of sufficient depth to contain at least four feet of water. And it shall be furnished with such locks, aqueducts, and dams, as may be required to insure a safe and convenient navigation for boats of at least seventy-five feet long, thirteen feet six inches wide, and drawing three feet of water. The reasonable expenses¹ incurred by said commissioner, in carrying the provisions of this act into effect, shall be paid out of the funds arising from the sales of the aforesaid lands.

Approved January 22, 1829."

The act incorporating the Illinois and Michigan Canal, approved January 17, 1825, named as corporators Edward Coles, Shadrack Bond, Justus Post, Erastus Brown, William S. Hamilton, Joseph Duncan and John Warnock.

Under and by virtue of the act of 1829, Governor Ninian Edwards appointed as commissioners Edward Roberts, Gershum Jayne and Charles Dunn. There are no official records of the proceedings of this board to be found except such as is found in the following reports:

"To the Honorable Board of Canal Commissioners, of the State of Illinois:

GENTLEMEN:—In compliance with your instructions, I now lay before you the result of the surveys and examinations confided to me on that part of the proposed route of the Illinois and Michigan canal, which is included between its entrance into the Chicago river and the western margin of the Ausoganashkee swamp, made with a view to its permanent location upon what has been considered the only practicable plan of obtaining a sufficient supply of water for the use of the summit level, assuming the bottom of the canal at its head to be 4 1-2 feet below the level of Lake Michigan.

"From the mouth of the Chicago river to the point fixed upon as the entrance of the canal, there is no obstruction whatever to its navigation by boats drawing under five feet for that distance, which is five miles, this river forms a perfect natural canal, its banks being low and of uniform heights, and its waters supplied by the Lake.

"Leaving the river at the point above mentioned, the line of the canal inclines towards the Regula (as will be seen by a reference to the accompanying map) and follows along the margin of the Portage lake until it strikes the river Des Plaines at the ford, a distance of nine miles; the excavation throughout this distance will pass through a hard ferruginous clay (as has been ascertained by borings) at an average depth of 15.41 feet. From the ford of the Des Plaines to the Ausoganashkee swamp, the line runs through the valley of the Des Plaines river, at an average elevation of 16.27 feet above the bottom of the canal. On this part of the route, which is nine miles in length, the excavation to the depth of 6.27 feet is good consisting of sand and clay, but the remaining ten feet composes almost a continuous map of limestone extending with little intermission from the ford of the Des Plaines to the end of the line surveyed, it is probably of the same character as that in the bed of the river, the upper strata only of which appear to be detached.

"The Ausoganashkee or Reed swamp does not present any insurmountable obstacles to the passage of the canal through it, although with the lake as a feeder, it must necessarily be attended with great expense. The canal is located immediately across its mouth, which is half a mile in breadth, the

depth of the excavation rendering it expedient to select the most direct route. The surface of this swamp is 15.86 feet above the bottom of the canal, 9.80 feet above the level of Lake Michigan and 2.30 feet above the river Des Plaines at its low stage, the excavations through it will consist of 5¹/₂ feet of mud and earth and 10.36 feet of rock.

"The following is an estimate of the cost of constructing the above described line of canal, 18¹/₂ miles in length, including the Ausoganashkee swamp, proposing its dimensions to be the same as those of the canals in the State of Ohio, which have a general width at bottom of 26 feet and a slope on the banks in earth of 1³/₄ feet base to every foot perpendicular rise—the bottom of the canal to have a descent of .08 of a foot to a mile and the water to be 4¹/₂ feet in depth.

EARTH EXCAVATION.

1,621,133 cubic yards earth excavation at 15c.....	\$243,170 00	
634,366 cubic yards earth excavation at 9c.....	57,095 00	
31,328 cubic yards earth across Ausoganashkee.....	6,265 00	\$306,530 00
94,966 cubic yards embankment at 14c.....		13,295 00
69,933 cubic yards rock excavation at \$1.40.....		965,906 00
150 chains grubbing at \$9.00.....		1,350 00
		<hr/>
Contingnt expenses 20 per cent.....		\$1,287,081 00
		257,416 00
		<hr/>
Total cost.....		\$1,544,497 00

To carry the canal entirely through the deep cut which terminates about six miles below the Ausoganashkee will probably increase the above amount to two millions and a half, the great expense of time and money thus necessarily incurred in making a feeder of the lake renders it desirable to use for that purpose some stream by which the summit level can be better adapted to the elevation of the ground on the line of the canal. The river Des Plaines when low affords a very inconsiderable quantity of water, but the Calamic river which empties into Lake Michigan about twelve miles south of Chicago, furnishes an abundant supply. (320,000 cubic feet per hour) and is in every respect, so far as my observation extends, advantageously situated as a feeder. Too much time was necessarily consumed in the survey on the line of the canal to admit of as particular an examination of this river as from the facts collected respecting it, it undoubtedly deserves.

It is evident from the nature of the ground, as well as from the representations of the inhabitants of the country, that there is in times of high water, a communication between the rivers Des Plaines and Calamic, through the vallies of the Ausoganashkee swamp and Stoney creek, as neither of these rivers rise more than ten or twelve feet and as there is no perceptible current between them when both are up, it is reasonable to conclude that the intermediate ground is low enough to admit of the waters of the Calamic being brought into the valley of the Des Plaines at a small expense, provided a dam can be made in the former at a sufficient elevation to give the feeder its proper descent. The distance from the river Des Plaines to the foot of the rapids of the Calamic through the vallies of the Ausoganashkee and Stony creek is seventeen miles, the greater part of the way through a low, level prairie. The rapids of the Calamic extend six miles up the river with an ascent, judging from the velocity of the stream, of a foot and a half to a mile.

On the supposition that the Calamic is on a level with the lake, from its mouth to the foot of the rapids, a distance of fifteen miles, the erection of a dam at the foot of the rapids of ten feet in height would raise the waters of the river, to within sixty-eight hundredths of a foot of the average height of the ground on the line of the canal, which is 10.68 feet above Lake Michigan, but as it is necessary to give a feeder considerable descent, there is apparently no difficulty in locating the dam a sufficient distance up the river to retain the required elevation, say five miles. This distance will probably increase the length of the feeder to twenty-one miles, allow it a descent of four inches to a mile and reduce the depth of cutting on the canal to 4.93 feet or four feet fourteen inches.

It will be readily perceived from the above detail that the practicability of this plan rests almost entirely upon a knowledge of the fact that the Calamie river has a sufficient fall for the erection of a dam at the required height.

By carrying into effect the foregoing plan, assuming the depth of cutting on the canal to be 4.93 feet and on the feeder four feet (which there is reason to believe it will not exceed) the cost of the eighteen and one-half miles of canal will be reduced from a million and a half to one hundred and sixty thousand dollars, allowing a liberal price for each item of work, as exhibited below:

CANAL.

617,584 cubic yards earth excavation at 9c.....	\$55,582 00	
16,691 cubic yards earth excavation across Ausoganashkee at 20c.....	3,338 00	
51,333 cubic yards earth embankment at 15c.....	7,700 00	
2,500 yards earth excavation, lock pit at 15c.....	375 00	
1,750 perches masonry at \$4.50.....	7,875 00	\$74,870 00

FEEDER.

Dam across Calamie river.....	\$10,000 00	
542,079 cubic yards earth excavation at 8c.....	43,366 00	
1,500 cubic yards earth excavation, lock pit at 12c.....	180 00	
1,000 perches masonry in Guard lake at \$4.50.....	4,500 00	
Waste wiers.....	1,000 00	59,046 00

Contingencies 20 per cent.....		\$133,916 00
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Total.....		\$160,699 00
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Respecting the probability that the actual cost of the canal, making a feeder of the Calamie will not exceed the above amount, it should be taken into consideration that the estimate of the quantity of excavation in the canal and of the cost of crossing the Ausoganashkee, is not made on as favorable an application of the summit level to the height of the ground as may, in all probability be found practicable, upon an examination of the Calamie river.

Respectfully submitting the above report to your consideration, I remain,

Your obedient servant,

VANDALIA, Dec. 18, 1830.

J. M. BUCKLIN."

CANAL REPORT.

REPORT OF THE CANAL COMMISSIONERS.

VANDALIA, 27th December, 1830.

To the Speaker of the House of Representatives:

SIR:—The Canal Commissioners have the honor to enclose report required by "An act to provide for constructing the Illinois and Michigan canal," approved January 22d, 1829, accompanied by the reports, profiles and map therein referred to.

They are very respectfully,

Your obedient servants,

EDW. ROBERTS, Pres't,
GERSHAM JAYNE,
CHAS. DUNN.

REPORT.

The Commissioners of the "Illinois and Michigan canal," appointed under an act of the General Assembly of the State of Illinois, entitled, "An act to provide for constructing the Illinois and Michigan canal," approved January 22d, 1829, most respectfully present to the General Assembly the following report:

That the objects of the act mentioned might be effected as soon as practicable, the commissioners met at Belleville in St. Clair county, on Friday the 13th day of March, following the passage of the law, and organized.

The law referred to provides "that if the government of the United States should furnish an engineer, it then should be the duty of the commissioners of this State to accept of his services for the purposes contemplated by the act." This provision, plainly indicating to the commissioners that it was their duty to correspond with the head of the proper department of the general government on the subject, they, through the president of the board, addressed a letter of inquiry to General Gratiot of the engineers' department, and received for answer that a corps of United States civil engineers would, about the first of October following, repair to Chicago in this State and proceed to survey, level and locate the line of "The Illinois and Michigan canal." At the time designated, two of the commissioners with the surveyor of the board and necessary hands, proceeded to Chicago to meet the United States engineers. About the 24th day of October, Dr. Howard with several assistants arrived at Chicago and commenced the survey and location of the canal line; but owing to their late arrival and the early commencement of winter weather in that section of our State situated in latitude 42 degrees north, the labors of the United States engineers were suspended for the time and they returned to Washington City, leaving a promise with the commissioners that they would return as early as practicable in the ensuing season and complete the survey and location thus by them commenced. Dr. Howard before leaving the State addressed a letter to the commissioners informing them in substance "that from the examinations and surveys made by him, the canal must be confined to the valley of the river, following the left bank of the Des Plaines at its upper portion and the right bank of the Illinois at its lower; the proper point and mode of crossing the Des Plaines remaining to be divided by the progress of the survey; the canal to begin on the Chicago creek at the fork near the point designated A by the former commissioners and proceeding by a direct course to the valley of the Des Plaines but keeping to the north of the Portage lake."

From the actual examinations and surveys made by the commissioners and the information derived from Mr. Howard, alluded to, the board did on the 21st of December, 1829, at a meeting held in the town of Kaskaskia, locate the "Illinois and Michigan canal" route and select the lands donated to the State, by the act of Congress passed March, 1827, entitled, "An act to grant a quantity of land to the State of Illinois for the purpose of aiding in opening a canal to connect the waters of the Illinois river with those of Lake Michigan." The commissioners selected each alternate section having an odd number, commencing with township No. 32 north of range No. 1 east of the third principal meridian, within five miles of each side of the canal, making in all four hundred and ninety sections. For more satisfactory information relative to the location of the canal line and selection of the lands, they refer the General Assembly to the map accompanying this report, on which the line of the canal is designated by a red dotted line, and the odd sections selected are embraced within the red lines on either side of the canal route. A map similar to the one now presented to your honorable body was, through the Executive of this State, transmitted to the commissioner of the general land office at Washington. The selections designated on the map were confirmed at the general land office, except twenty-one exterior sections. It was objected by the commissioner of the general land office that the plan of selecting adopted by the commissioners of the canal in this State gave to the State an excess of twenty-one sections, and referred to certain rules laid down in his department by which the commissioners of the State of Indiana had been governed in a similar case. Fearing that a rigid adherence to the selections made by the commissioners might retard the emanation of patents for the remaining four hundred and sixty-nine sections, they, for the time, acquiesced in the decision made at the general land office, without being understood as yielding the claim of the State to the twenty-one sections excluded.

Pursuant to public notice, given in several newspapers printed in this State, in the "National Intelligence," published at Washington City, and the "Albany Argus" and "Cayuga Patriot," printed in the State of New York, the commissioners offered for sale publicly at Springfield in Sangamon county, on the 19th, 20th and 21st days of April last, all the lands patented to this State for canal purposes inclusive, beginning at township No. 32 north of

range 7 east, except sections 11, 15 and 17 in township No. 33 north, range 2 east, which were for the time reserved from sale. For a particular and detailed account of the sale of these lands, the commissioners refer to the report of the treasurer of the board, which accompanies this communication. That means might be realized as early as possible to commence the work of excavation, the commissioners determined to bring into market the remaining canal lands on the 27th day of September at Chicago, and on the 4th day of October following at the rapids of the Illinois river. In the meantime, they laid off into town lots part of section 9, T. No. 39 N., R. 14 E., lying on the Chicago river near Lake Michigan, and part of section No. 11, T. 33 N., R. No. 3 E., situated at the mouth of Fox river on the Illinois.

A portion of these lots were with the remaining canal lands (except fractional section 15, T. 39 N., R. 14 E.) after public notice given, offered for sale at the times and places specified. The report of the treasurer before referred to, embraces a satisfactory and detailed account of these sales. The sales of lots in the town of Chicago on section 9, T. 39 N., Range 14 E., amounted to about \$4,363 and were so flattering as to inspire the commissioners with a confident hope that the remaining lots, say about three-fourths, would, with proper care and management, yield a very handsome increase to the canal fund. This town is situated on the Chicago river, near its mouth and possesses many advantages, natural and advantageous. It is the only eligible site for a town on the Lake shore within the limits of Illinois surrounded by a beautiful, champagne fertile country, surpassed by none in the richness of its products and from the long experience of its inhabitants is decidedly healthy. Its prominence in a commercial point of view has already prompted merchants from the northeastern part of the State and northwestern part of Indiana to take their produce to Chicago, ship for Detroit, Buffalo, and New York and return by the same route, as the safest and cheapest. Saving on the transportation of goods 1.25 per hundred weight and performing the trip ten days sooner, than by either of the other channels, through which merchandise is brought into these sections of the two States. The circumstance of Chicago being located at the head of the contemplated canal will make it the future depot of all the surplus products of the country on the Illinois river and its tributaries. These advantages point out its importance and at once elicit the fostering care of the Legislature of this State. Nothing would conduce more to the prosperity of this place than the construction of a safe harbor at the mouth of the Chicago river. However, as the attention of the Legislature has been directed to that point, by his Excellency the Governor of this State in his inaugural address, the commissioners forbear urging anything further on the subject. The town of Ottawa at the mouth of Fox river of the Illinois advantageously situated in the heart of the most beautiful, fertile and healthy region of the country, and, as connected with the canal deserves the legislative care of the State.

After the sales in September and October, the amount of funds on hand were thought by the Commissioners to be sufficient to justify a commencement of the work of excavation; and under this impression, one of the Commissioners remained at Chicago with a competent engineer and surveyor, in order to locate permanently and prepare for a contract, a portion of the canal. The United States engineers arrived at Chicago in the month of August, to complete the survey commenced by them the fall previous, of whom the commissioners reasonably expected to obtain such surveys, levels and field notes, as would enable them to prepare, as contemplated, a portion of the canal for excavation. But on application by the commissioner remaining in Chicago, he was informed by the United States engineers that the level before taken by them had not been satisfactory, and they had been directed to resurvey and level and had consequently left their field notes and levels taken in 1829 at Washington City. This state of facts produced an embarrassment in the minds of the commissioners. It will be recollected that the provisions of the law first referred to, made it the imperative duty of the commissioners to accept the services of an engineer of the United States, if they should furnish one. Upon request, the United States Government furnished engineers. Having every confidence in the sentence, skill and experience of the engineers sent out by the United States and entertaining a well founded hope (as

they supposed) that by time a fund could be realized, sufficient to justify a commencement of excavation, these gentlemen would have completed their labors, the commissioners avoided incurring any expense by the employment of an engineer until it was thought advisable to begin such labors as the United States engineers were not expected to supervise or direct. The inclemency of the weather in the fall and winter of 1829, as has been explained, prevented the corps attached to Dr. Howard from completing the survey and level of the canal line in that season. And from some cause, not known to nor within the control of the commissioners, they did not return to finish what had been by them commenced, until the sickly season in August last. Messrs. Harrison and Guyon, the only two engineers of the corps who returned, were seriously afflicted by sickness and remained ill so long, that the commissioners despaired of being materially benefited by a continuation of their labors in the present year.

Charles Dunn, the commissioner who remained at Chicago for the purpose of preparing for contract a part of the route, having engaged to assist him in that work Mr. J. M. Bucklin, a scientific and practical engineer from the Miami and St. Louis and Portland canals and Col. Samuel Alexander, a skillful surveyor, determined under all circumstances to commence *de novo* and survey, level, stake out, bore and permanently locate so much of the canal line as was practicable before the beginning of winter. On the 20th of October the commissioner and party left Chicago to perform this labor and returned on the 12th of November following, having completed the examinations, surveys and levels on that part of the canal line which is included between its entrance into the Chicago river and the western margin of the Ausoganashkee or Reed swamp, about eighteen and a half miles from the point of beginning. For satisfactory information, the commissioners respectfully refer the General Assembly to the report and profile by Mr. Bucklin, engineer, which are herewith submitted.

From the estimate embraced in the engineer's report, it will be discovered that the cost of construction of that part of the canal, included within the points mentioned, will exceed one million and a half of dollars. This estimate is founded on the presumption that the water required, say four and a half feet in depth, is to be supplied from the lake; and that the dimensions of the canal are twenty-six feet in width at bottom, with a slope on the sides (in earth) of one foot and three quarters base to every foot perpendicular rise. The law on this subject has prescribed that the dimensions of the canal shall be as follows: "At least forty feet in width at the summit water line, twenty-eight feet wide at the bottom and of sufficient depth to contain at least four feet water." The difference in the dimensions assumed by the engineer, for the purposes of calculation, and those prescribed by law, is so slight that the estimate predicted on the first may be safely relied on as applicable to the latter.

The great expense of construction that must be incurred on the plan of using the waters of the lake to supply the summit level, induced the commissioners to make such examination and inquiries as time permitted into the practicability of procuring a sufficient supply of water from some other source, that would raise the summit level sufficiently high to avoid rock excavation. It is believed that the river Calumet which empties into the Lake about twelve miles south of Chicago, furnishes an abundant supply of water (320,000 c. feet per hour) and is in other respects advantageously situated for the purpose. Too much time was necessarily consumed on the canal line to admit of a particular examination of this river during last fall, but the information communicated by the engineer in his report and such observations as the Commissioners have been able to make, convince them of the practicability of the plan of using the Calumet as a feeder.

When we reflect that the cost of constructing the first eighteen and a half miles of the canal, will not, on this plan exceed \$160,000 and that on the other it will amount to more than a million and a half, the reasons in favor of using the waters of the Calumet will appear too obvious to require comment. The report of the engineer is referred to for more satisfactory information on this subject.

From the facts disclosing in the preceding part of this report and the additional facts that but little information has, as yet, been derived from the engineers of the United States Government, it is apparent that the commissioners have it not in their power to furnish the General Assembly with accurate surveys, levels and estimates of cost of that part of the canal line lying between the Ausoganashkee or Reed swamp and the point of intersection with the Illinois at the mouth of the Little Vermilion. The course of the line is correctly delineated on the map referred to, and the commissioners feel authorized to say that the whole expense of construction, considering its greater distance, will be small compared with that on the upper portion of the line.

Could the commissioners have anticipated the accidents which have retarded the operations of the United States engineers, they most assuredly would have guarded against them by employing an engineer at an earlier period; and thereby have been prepared to place under contract and actual construction last fall a portion of the canal commensurate with the means on hand.

The circumstances which have combined to impede, in a measure, the advancement of this great work, were not within the legitimate control of the commissioners. And, when in addition to what has been stated, it is brought to mind that they commenced the discharge of their duties without one cent of public money, to defray heavy expenses necessarily incurred, before funds could be raised from the sales of lands; and that these expenses were, in many instances paid by draughts on their individual purses, they feel sure that the General Assembly will feel satisfied as much as has been done as could be reasonably expected.

Without any suggestions from the commissioners, the wisdom of the Legislature will readily discover the policy of prosecuting the work on the canal, so far as the means granted by Congress will justify. It is obvious to every one that when these means are usefully employed and exhausted, the liberal policy of the General Government will bestow further aid to complete a work of so much national importance as "The Illinois and Michigan Canal" is admitted to be by all.

The amount of money in the hands of the treasurer on the first December, 1820, and available for canal purposes, is \$12,552.03. The amount of expenses for the two years preceding is \$5,498.58. The selection of the lands donated to the State, the laying off towns, and the draughting of maps of each, with the contingent expenses attendant, constitute large items in the amount expended. These preparations being completed, and the cost defrayed it may reasonably be expected that little or no expenses of any kind will be incurred in future.

The amount of receipts in the treasury is daily augmenting and from the rapid increase of population on the canal line, must continue to augment until the arable lands are all taken up.

The practicability of the plan of using the Calumet river as a feeder, being first settled there can be no doubt that money enough will be received to excavate a considerable part of the upper portion of the canal in the next year.

Some very intelligent gentlemen, whose opinions are entitled to much weight on all subjects which they profess to understand, have thought that the interests of the canal would have been better consulted by offering the lands for sale in some of the Atlantic cities, where capital abounds. The reasons which influenced the commissioners to pursue a different course in conducting the sales, which have been made, are these: First. Had the lands been offered for sale at New York, for instance, the personal attendance of one of the commissioners or hired agent of the board, and of the treasurer would have been indispensable. The expenses would have been necessarily great, and it will be recollected the commissioners had no fund to defray them. It is true, the money might have been borrowed upon their individual responsibility, but this could not have been expected or required. Second. An apprehension that capitalists abroad could not be induced to

make any very considerable investments in lands in this State, of the intrinsic value of which they were entirely ignorant. It is not reasonable to suppose that a considerate, prudent man would give anything like a fair price for land or other property, without having seen, examined and duly estimated its real worth. And, lastly. It was thought to be due to the citizens of our own and adjoining states, to give them an opportunity of entering into a fair competition in the purchase of these lands at their own doors, with such as would be drawn from remote states, by the desire of gain.

Information derived from very many respectable sources, has produced conviction in the minds of the commissioners that many acres of canal lands can and will be sold to non-residents in the next year. And further, that the purchasers would much prefer to attend sales on the line where they can examine and decide for themselves on the quality and other advantages of the land offered.

Before the commissioners close this report, they would respectfully recommend that the law prescribing the dimensions of the canal be so changed as to authorize its construction with the dimensions assumed by the engineer in his report. Experience has proven, in the State of Ohio, where many improvements have been made, in the system of canal construction that the dimensions recommended are probably the best given to canals, where steam-boat navigation is not intended; in as much as they give sufficient capacity at bottom and at the same time secure to the banks more permanency by reason of their inclinaure being greater.

They would also respectfully recommend the propriety of so amending the act in reference to the canal, as to authorize the commissioners to sub-divide any tract of canal land into lots of not less than five acres, and sell the same according to such sub-division, when they may think the interest of the canal will be promoted by so doing.

The commissioners are convinced that, in many instances, canal lands could have been sold to great advantage had the law bestowed them with the power of sub-dividing the tracts, so as to accomodate the various wants of the purchasers.

It might not be impolitic to empower the commissioners, by law, to make donations of lots in the towns laid out on the canal line to the counties in which they may be situated, for the purpose of erecting thereon public buildings. This suggestion is submitted with due deference.

[Signed.]

EDM'D ROBERTS, *Pres.*

GERSHAM JAYNE.

CHAS. DUNN.

The Canal Fund in Account Current with James B. Campbell, Treasurer of the Board of Canal Commissioners.

RECEIPTS.

Cr.

By amount of sales of canal lands, to-wit:

For lands sold in April, 1830.....	\$1,924 20
.. .. May, ..	2,655 62
.. .. June, ..	200 00
.. .. September, ..	1,912 42
.. .. October, ..	4,147 85
.. .. November, ..	2,465 52
Amount sold up to 4th December, 1830.....	200 00
Total.....	\$13,505 61

DISBURSEMENTS.

		Dr.		
April 20, 1830	To amount of commissioners' order No.	1	to S. Bartholomew.....	\$11 50
"	"	2	Enos Pembroke.....	28 00
"	"	3	H. McGary.....	20 00
" 21, "	"	4	James Thompson.....	280 00
" 22, "	"	5	John Harper.....	23 37 ¹ / ₂
"	"	6	Simion Steele.....	18 87 ¹ / ₂
"	"	7	Wm. Adams.....	30 00
"	"	8	Wm. Porter.....	10 00
"	"	9	Henry Porter.....	232 27 ¹ / ₂
"	"	10	Samuel Dawson.....	108 00
"	"	11	Sam'l McClintoc.....	10 00
"	"	12	Charles Dunn.....	151 00
"	"	13	Gresham Gayne.....	402 19
"	"	14	James B. Campbell....	68 00
"	"	15	I. Harlan.....	41 25
"	"	16	Chas. Dunn.....	50 00
"	"	17	G. Gayne.....	25 00
"	"	18	S. C. Medreith.....	28 00
May 24, "	"	19	S. C. Medreith.....	1 50
"	"	20	Thos. P. Green.....	20 00
June 2, "	"	21	David Walker.....	6 50
"	"	22	Sidney Breese.....	15 00
"	"	23	R. K. Flemming.....	24 00
"	"	24	I. T. Sprigg.....	50 00
"	"	25	Wm. C. Greenap.....	6 80
"	"	26	Edm'd Roberts.....	521 00
"	"	27	I. Harlan.....	129 00
"	"	28	G. Gayne.....	200 00
"	"	29	John Lee.....	39 75
Oct. 5, "	"	30	James Thompson.....	114 00
"	"	31	Enos Pembroke.....	11 37 ¹ / ₂
"	"	32	G. Gayne.....	184 62 ¹ / ₂
"	"	33	E. Roberts.....	299 50
"	"	34	Wm. Porter.....	80 00
Oct. 5, 1830	I. B. Campbell as per his ac. No. 35 retained by order of Bd.....			46 12
June 26, "	To amount of commissioners' order No. 37 to David Walker.....			11 06
"	To amount of commissioners' order No. 36 C. Dunn, (omitted in its place.....)			124 00
Oct. 5, "	To amount of commissioners' order No. 38 C. Dunn.....			194 87
Dec. 18, "	"	39	E. Roberts.....	209 06
"	"	40	Charles Dunn.....	1,643 75
"	"	41	Wm. Porter.....	10 00
To bal. in my hands subject to commissioners' draft.....				\$5,498 58
				8,007 03
				\$13,505 61
Cr.				\$13,565 61
Balance in my hands as above.....				8,007 03
Add amount received for town lots sold in Chicago and Ottawa as per account herewith rendered marked B.....				4,545 00
Dec. 18, 1830	Being the amount now in my hands subject to the drafts of the commissioners.....			\$12,552 03

JAMES B. CAMPBELL,

Treasurer of the Board of Canal Commissioners.

EXCERPTS FROM REPORT OF COMMISSIONERS OF 1830.

"The commissioners met at Belleville in St. Clair county and organized March 13, 1829. They addressed a letter to General Gratiot, of the engineering department, and received an answer that a corps of United States civil engineers would about October 1st following, repair to Chicago and proceed to survey, level and locate the line of the Illinois and Michigan Canal. At the time designated the commissioners with the surveyor of the board and necessary hands proceed to Chicago and met the United States engineers.

About October 24th, Dr. Howard with several assistants arrived at Chicago and commenced the survey and location of the canal line. After informing the commissioners that the canal must be confined to the valley of the river and to begin at the Chicago creek at the fork near the point designated "A" by the former commissioners, the United States engineers returned to Washington."

"At a meeting of the commissioners held in the town of Kaskaskia, December 21, 1829, they had located the Illinois and Michigan canal route and selected the lands donated under the act of 1827, a plat of which is on file, and a copy was sent through the Executive of the State to the Commissioners of the General Land Office at Washington, D. C."

"The United States engineers arrived at Chicago in the month of August and completed the survey commenced by them the fall previous, having left their field notes and levels taken in 1829 in Washington City. This state of facts produced an embarrassment, the law making it imperative in the commissioners to accept the services of an engineer of the United States, the commissioners avoided incurring any expense in the employment of engineers until they thought it advisable to begin such labors as the United States engineers were not expected to supervise or direct. Charles Dunn, the commissioner who remained at Chicago, engaged Mr. I. M. Buckley, a scientific and practical engineer from the Miami, Louisville and Portland Canal, and Colonel Samuel Alexander, a skillful surveyor, determined under all circumstances to commence *denovo* and survey, level and stake out and permanently locate. On the 20th of October the commissioners and party left Chicago to perform this labor and returned November 12th following. The report is signed by Edward Roberts, president, Gersham Janey and Charles Dunn, commissioners."

LETTER OF GOVERNOR EDWARDS AND CERTIFICATE OF COMMISSIONER OF
GEN. LAND OFFICE.

"BELLEVILLE, ILLINOIS, 25 Dec., 1829.

"SIR:—I have the honor herewith to transmit to you a map of the route which has been selected for the canal to connect the waters of Lake Michigan and the Illinois river, with the selection of the lands granted to the State which has been made by the canal commissioners of this State according to law and as nearly agreeable to your instructions as was practicable. If these selections should be approved by the president, it is hoped that patents will be transmitted as soon as practicable. Wishing to avoid delay, I have no time to have a copy taken of the map herewith sent and should be very glad if you would send it back after you are done with it.

I have the honor to be, very respectfully, sir,

Yr. ob mo st.,

"NINIAN EDWARDS."

H. F.

"DEPARTMENT OF THE INTERIOR,
GENERAL LAND OFFICE.

"WASHINGTON, D. C., November 23, 1882.

"I, N. C. McFarland, Commissioner of the General Land Office, do hereby certify that the annexed tracing copy of the Illinois and Michigan canal, filed under the provisions of the act of Congress approved March 2, 1827, and also hereto attached, the letter transmitting said map to this office, by the Governor of Illinois, dated 25 December, 1829, are true and literal exemplifications of the originals now on file in this office.

In testimony whereof, I have hereunto subscribed my name, and caused the seal of this office to be affixed, at the City of Washington, on the day and year above written.

(Seal.)

N. C. McFARLAND,
Commissioner of General Land Office.

It does not appear from any records or documents on file in the canal office, or in the State house at Springfield, that there was any survey or attempted survey of a route for the canal between that made by Post and Paul in 1824 and the one by Bucklin in 1831, therefore the map of the proposed route of the Illinois and Michigan canal sent to Washington soon after the act of 1827, for the selection of land under that grant, must have been the map made in 1834 and referred to in the report of the incorporators when they surrendered their charter in 1825.

In 1831 the General Assembly passed an act to amend an act to provide for the construction of the Illinois and Michigan Canal.

SECTION 1. *Be it enacted by the People of Illinois, represented in the General Assembly*, that the Board of Canal Commissioners authorized to be appointed by the act to which this is an amendment, shall hereafter consist of three members who shall be appointed by the Governor by and with the advice and consent of the Senate, and who shall be subject to re-appointment biennially. Said commissioners shall constitute a board to be known under the style and description of the Board of Canal Commissioners of the Illinois and Michigan Canal.

§ 2. The Governor shall appoint one of the commissioners of said board as acting commissioner and who shall be constantly on the canal route when necessary. The said superintending commissioner shall under the consent and direction of said board employ such agent, engineers, surveyors, draftsmen and other persons as in their opinion may be necessary to enable them to fulfill and discharge the duties imposed upon them by this act or the one to which this is an amendment. He shall also under the consent and direction of said board fix prices and let out contracts for excavation, embankments, dams, aqueducts, culverts and make all other contracts necessary to the excavation and construction of said canal. They shall have power to employ an engineer, without regard to any that has been promised on the part of the general government, to survey the whole line of the canal, or so much thereof as may be necessary for superintending and aiding in the construction of said canal, and for all other purposes connected with the same; they shall also have the power to cause said engineer to examine the Illinois river, from the mouth of Fox river down to the head of steamboat navigation; and if, in their opinion, the navigation of the Illinois river can be improved by dams and locks or otherwise, so as to secure its navigation as far upwards as the mouth of Fox river, with as little expense, and as much utility, as canalizing from Fox river to the Little Vermillion, or foot of the rapids, they shall have power to terminate said canal at the mouth of Fox river. It shall be the duty of the superintending commissioner, to cause the engineer employed by him, to ascertain as early in the spring as the weather will permit, whether the Calumet will be a sufficient feeder for the part of the canal between the Chicago and Des Plaines river, "or whether the construction of a railroad is not preferable, or will be of more public utility than a canal." And if the commissioners shall seem satisfied of sufficiency of said river, and that a canal will be of more public utility than a railroad, it shall be their duty to commence the excavations without delay. And if they should be of opinion that it would not, all further proceedings in relation to said canal, and sales of land, shall be deferred until the next meeting of the Legislature: *Provided, however*, that said commissioners shall cause such a commencement to be made in the progress of the said canal, as to bring the State within the act of Congress making such grant, so as to have said grant to the State if they shall be of opinion sufficient has not been done already.

Under and by virtue of this act, Governor John Reynolds appointed as commissioner J. H. Pugh and Charles Dunn. And designated Charles Dunn to be acting commissioner.

There are no official records of the proceedings of this board to be found except such as are contained in the following reports:

Copy of the report of James Bucklin, engineer on the part of the State of Illinois and Michigan canal, on examination of the Calumet river.

GENT:—Although from the facts which have come before us in the late survey, no doubt is entertained of the practicability of supplying the summit

level with water from the Calamie, yet the same degree of confidence can not be felt in recommending it as a feeder in preference to any other, as might be reasonably entertained could its waters be confined within its banks above the proposed dam for many miles above the head of the rapids; this can not be effected by the construction of a dam of the required height by which a large tract of country within the limits of Indiana would of course be rendered unfit for cultivation, the payment of the damages accruing from this cause devolving upon the canal and the difficulty and delay which may be anticipated in obtaining the consent of the State of Indiana should not be overlooked in the examination of the question presented. As to the feasibility of this project, as far as excavation and embankments are concerned, the rout of a feeder is of a character very favorable.

The Calamie at the foot of the rapids, was found to be 5 feet above the lake, and the fall from the head to the foot of the rapids is 3 feet. Artificial reservoirs, for the purpose of aiding and supplying canals with water, have been in use many years and are now extensively and successfully employed. The largest reservoirs of which we have any account has been constructed for the supply of the Languedoc canal in the south of France, the area of which is 595 acres, and the depth 30 feet. The next in capacity is the Licking Summit and Reservoir on the Ohio canal, which cover an area of 2,424 acres, with an average depth of 6 feet. As a reservoir, the Ausoganaskee swamp may be rendered available to supply the deficiency of the Des Plaines. It will contain an area of 900 acres, and the water of the Des Plaines can be put in requisition to fill it to the depth of 11.5 feet. The length of the Summit Level will probably be 30 miles, certainly not more. Experience has shown that not less than 100 cubic feet of water per minute for each mile, in addition to the quantity necessary for leakage, ought to be admitted into a calculation having in view a full and regular supply thirty miles required for its supply of water 3,000 cubic feet per minute..... 3,000

Add the quantity of water necessary to the passage of 100 boats over the Summit Level in each 24 hours..... 938

Cubic feet per minute..... 3,938

An area of 900 acres, 11.5 feet deep, will contain..... 460,363,400

Loss by evaporation..... 60,047,000

Cubic feet..... 400,316,400

This quantity of water will supply the level of 30 miles during 8 months, the remaining 4 months the Des Plaines will be required.

ESTIMATE OF THE COST.

Embankment, 175-112. at 16 cents	\$38,017 92
Two-inch plank, 100,000, at 3 cents	3,000 00
Marking, 106 ch.. at 10 cents 3,500 yards.....	350 00
Head gate at reservoir.....	1,200 00
	<hr/>
	\$32,567 92
Add cost of canal from Chicago river to the Ausoganaski.....	74,870 00
Add 2 per cent for contingencies.....	21,457 58
	<hr/>
Total cost of reservoir and canal to the reservoir.....	\$128,925 50

It must be acknowledged that a feeder furnished by the natural flow of a durable stream is much preferable to a reservoir; breaches in embankments exposed to a pressure of water sometimes occur notwithstanding much care may be used to guard against them. When a canal is furnished with water by the natural flow of streams, a failure in the embankments connected with it produces no further delay in the navigation than the necessary time for its repair, but should a breach occur in the banks which form a reservoir, that part of the canal dependent thereon would be without a supply of water until the reservoir could again be replenished. An accident of this nature occurring immediately preceding the winter of spring floods would produce but little delay in the navigation; but should such an accident occur after the annual floods, which are the main reliance for filling the reservoir, the delay would

necessarily continue for a much longer period, as there would be no means of replenishing it until the rain of the succeeding fall or winter should have caused sufficient floods for that purpose.

These casualties are mentioned as being peculiar to this method of supplying a canal. It is indeed possible to make the reservoir banks so strong as to render them free from the contingencies alluded to, but it is impossible to say at what point this expenditure should stop if a due regard be had to economy.

I have thought it my duty to place before you the prominent objections which exist to both the above plans, as upon an examination of a line from Chicago to the mouth of the Fox elevation of the ground and facility of procuring materials for the construction of a railway may be such as to render that species of improvement in transportation as easy of execution and place it in a point of economy on a par with the former, obviating all their objections.

June, 1831. Copy of the engineer's report.

Recorded.

SPRINGFIELD, 21st Nov., 1831.

To Charles Dunn, Acting Commissioner Illinois and Michigan Canal.

SIR:—Having in conformity to your instructions finished the examination of the Calumet river, together with a series of surveys in the valleys of the Des Plaines and Illinois rivers, necessary to the development of their true character, with reference to the projected improvement of the communication between Lake Michigan and the navigable waters of the Illinois river by means of a canal or railway. A detailed report of the results including the maps and profiles of the different lines surveyed will be furnished the board as soon as practicable.

The objects of the examination of the Calumet river was in a great measure attained, but with every facility afforded for the supply of the Summit Level with water, at the most favorable elevation, the facts elicited by the examination of the route of the proposed canal are unfavorable to the practicability of its safe and economical construction. The route examined for a railway, commencing at Chicago crossing the Des Plaines at Laughton's ford and pursuing the N. W. bank of the Des Plaines was found extremely favorable for the adoption of that species of improvement, the ascent from Chicago to the Summit Level is 25 feet and descent from thence to the foot of the rapids of the Illinois 170 feet, which can be readily overcome by motive power without the aid of stationary engines at a rate of graduation rarely attaining and seldom exceeding 20 feet to a mile, materials of stone and timber are generally found in the immediate vicinity of the line.

The comparative estimates of the cost of improving the navigation of the rapids and of the continuation of the canal or railway, from the mouth of Fox river to their termination, not being completed the board is respectfully referred to the final report for information on that subject.

Very respectfully yr. obt. servt,

J. M. BUCKLIN,

Engineer M. & I. C.

SPRINGFIELD, Nov. 22nd, 1831.

To "the Board of Canal Commissioners of the Illinois and Michigan Canal:

The undersigned acting commissioner herewith encloses a statement of Mr. James M. Bucklin, engineer, relative to the examination of the Calumet river and to a series of surveys in the valleys of the Des Plaines and Illinois rivers.

This statement will apprise the board that the entire surveys and examinations of the canal and railway line, and of the rapids of the Illinois river from the mouth of Fox river down to their termination, have been made.

The engineer is of the opinion that "the facts elicited by the examination of the route of the proposed canal are unfavorable to the practicability of its

safe and economical construction." But represents that the route examined for a railway was found extremely favorable for the adoption of that sort of improvement. These statements of the engineer but confirm a conviction that I had for some time labored under.

Mr. Bucklin promises a detailed report of the results, including the map and profiles of the different lines surveyed as soon as practicable. I am aware that this service will require some time and considerable labor. During the season (and that a very unfavorable one too) about two hundred miles of canal and railway line have been surveyed and examined, under every circumstance of distress and embarrassment.

Upon the subject of improving the navigation of the rapids of the Illinois up to the mouth of Fox river, an opinion will not be expected until the estimate of costs, which will accompany the engineer's detailed report is received.

My detailed report will be made to the board as soon as that of the engineer is received, upon which mine must greatly depend for many important facts.

Very respectfully,

CHAS. DUNN,
Act. Com.

SPRINGFIELD, Nov. 23, 1831.

SIR:—The undersigned commissioners of the "Illinois and Michigan canal" have the honor to report that the surveys designed to connect the waters of the Illinois river with Lake Michigan, have been completed by Mr. James M. Bucklin, the engineer, employed by the superintending commissioner; and also of a railway, pursuing a route in some respects different from that of the canal, in the same section of country. Both surveys are required by the act of the Legislature; that the comparative difference of the two descriptions of work may be reported by the commissioners to the consideration of the Legislature with their opinion of the preference which should be given to either.

They regret that it is not in their power to make a report in detail. This cannot be looked for from them until they have all the means which the subject is susceptible of furnishing, necessary to satisfy the expectations of the public. They deem it a sufficient reason to say that the engineer in their employment has been constantly and indefatigably engaged in the execution of the work for nearly seven months past, notwithstanding the season were exceedingly unpropitious. But their convictions justify them in stating that the work has been executed with great pains and fidelity, and which they think, merits, in reference to its accuracy, the confidence of the country.

It would be premature in the undersigned to say *unqualifiedly* that either one of the improvements contemplated should be preferred to the other, without the aid they would derive from the estimates of the cost. But from the convictions that at present influence them, they cannot hesitate to say that a railway on the route referred to, is decidedly preferable to a canal.

This survey, as made by Mr. Bucklin, enables us to state the fact, that in relation to a canal, the material parts of the excavations would have to be made through rock; embracing a distance in the line more than eight times greater than that reported in the first survey and it is clear to the correct observer of the ground that the very causes that would be very costly and embarrassing in making a canal, would lessen the expense and augment the facilities of a railway. We will not, before the estimates are made, anticipate the cost of either work, but we think we cannot err, when we suppose that the cost of railway on this route would be greatly less than of a canal.

The maps, profiles and estimates of a railway and canal, will be made out by Mr. Bucklin without delay, but which will necessarily, however, occupy some time to enable him to accomplish this part of his labor. But we state it as our present convictions, undecided by his report, that unless there are some facts hereafter presented (which we do not now anticipate) we should feel it our duty to recommend to the Legislature the adoption of a railway in preference to a canal.

The superintending commissioner has caused the Illinois river to be examined by the engineer from the mouth of Fox river to the foot of the rapids of the Illinois. When he shall have made his estimates, if it shall be found that the Illinois river can be improved to the foot of the rapids suited to steamboat navigation, with as much advantage, "and as little expense," as a canal or railway for the same distance they will regard it as their duty to commence that part of the work in the spring, or as early as the stage of the water will permit.

Statement of the engineer and superintending commissioner are herewith respectfully submitted.

We have the honor to be, very respectfully,

Your most obt. servt.,

I. H. PUGH,
President Board of Commissioners.
 CHAS. DUNN, Bowling Green,
Act. Comm.

His Excellency, JOHN REYNOLDS,
Governor of Illinois.

Report of C. C., Nov. 23, 1831.

AUDITOR'S OFFICE,
 VANDALIA, 29th January, 1833.

SIR:—In obedience to a resolution of the House of Representatives calling on the Auditor to report the number of town lots and quantity of canal lands sold on the canal route and the amount for which the same were sold, I have the honor to submit the following statement, viz.:

The number of lots which have been sold in the town of Chicago are 124 and were sold for the sum of \$4,357.00.

The number of lots which have been sold in the town of Ottawa are seven, and were sold for the sum of \$162.00.

The quantity of canal land which has been sold is 10,746 17-100 acres and was sold for the sum of \$14,405.83.

All of which is respectfully submitted.

To the Honorable Speaker of the House of Representatives, Illinois:

JAMES. T. STAPP,
Auditor.

VANDALIA, January 30th, 1833.

To the Honorable House of Representatives:

The undersigned members of the Board of Canal Commissioners, have the honor to acknowledge a third call made by the House of Representatives, and two from the Senate, in relation to the "Illinois and Michigan canal" or "railroad."

The undersigned refer to the answer they addressed to the House of Representatives in relation to their second resolution on this subject for the information it contains as to the state of facts, and which is understood by them to be in the hands of a select committee. That answer, they trusted, would have given satisfactory reasons to the House on the subject, but inasmuch as it has not, the board with pleasure acquiesces in a response to a further call. By the act of February the 15th, 1831, it was made their duty for the board to make their report to the Governor, and which by him was to be laid before the Legislature. Resolutions of nearly the same date were passed by each house of the same import of the one which has occasioned this answer.

According to the existing law, admitting that the board made their report to the Governor, they can not suppose that any obligation devolved upon him to supply a copy to each house. The undersigned therefore made twenty days since, out of courtesy and respect, a report to the Senate, which, as they

conceive, in *strictness* ought to have been made to the Governor, but they had too much respect for the Legislature to decline a compliance with any call that would facilitate their action upon the subject.

They have again, therefore, to say that all the information called for in the last resolution of the House of Representatives is a matter of record, and now has been for more than twenty days in the possession of the Senate, as called for by their resolution. The maps and profiles, the quantity of land sold, and the amount received from the sale of town lots on the canal route, the amount each of the commissioners has received for their services, and the amount of money now on hand,—has for more than twenty days been fully before our branch of the General Assembly.

But, they will add, if they can get the papers back into their possession, they will with infinite pleasure copy them and supply the House of Representatives with a copy of their report.

We have the honor to be,

Very respectfully, your obt. serts.,

J. H. PUGH.
President,
CHAS. DUNN,
Act. Comm.

Charles Dunn, Esq., Acting Commissioner Illinois and Michigan Canal:

SIR:—Your instructions respecting the continuation of the survey of the route of the canal, and the examinations necessary to a correct understanding of the comparative adaption of the country between Lake Michigan and the Illinois river to the respective improvements under consideration, were observed early in the spring of 1831, by an examination into the practicability of making the Calumet river tributary as a feeder to the Illinois and Michigan canal. Its successful result, although highly important as a means of avoiding a great source of expense in the event of the construction of a canal, was lessened in value by the development of unexpected obstacles, over which it had no control, in the process of a subsequent survey of the remaining part of the route of the canal from the termination of the survey of 1830 at the Ausoganashkee swamp to the navigable waters of the Illinois river.

The discharge of the Calumet river in the fall of 1830, a season of extreme drouth, amounted to 320,000 cubic feet per hour, which may be safely relied upon as its minimum discharge. This quantity was considered sufficient for the upper portion of the canal, but by the late survey the length of canal to be supplied from the summit until relieved by the river DuPage proving to be much greater than was anticipated, an additional supply of 102,400 cubic feet per hour will be required for its consumption. The river Des Plaines, in most seasons would alone make up the deficiency, but in the fall of 1830 its discharge was at one period reduced to 60,000 feet per hour. Relying upon its contributing this quantity of water in the driest seasons, there will still remain a deficiency of 42,400 cubic feet for which there is no resource but the establishment of an artificial reservoir on the Summit Level. The Ausoganashkee swamp presents great advantages for this purposes as it receives the drainage of the country to a great extent, and is susceptible at a comparatively small expense, of being rendered more secure from breaches and other casualties than most works of a similar description. It will form an area of 1,194 acres, capable of being filled to the average depth of ten feet and of containing a body of water more than adequate after the deduction of a large allowance for evaporation and leakage to all demands made upon it by the above mentioned deficiency.

In determining the quantity of water necessary to provide for consumption of the canal by evaporation and leakage, I have been guided by the valuable experience of the engineers of the State of Ohio and have adopted the allowance of 6,000 cubic feet per hour for every mile. The length of canal drawing its supply of water from the sources enumerated above, is 56 miles including the length of the feeders. The following statement exhibits the value of these sources of supply collectively, and their power to meet the demands upon them.

Discharge of the Calamic river per hour in cubic feet.....	320,000	
Discharge of the Des Plaines river per hour in cubic feet.....	60,000	
Contents of Ausoganashkee reservoir	520,000,000	
Deduct for evaporation and leakage.....	100,000,000	
	420,000,000	
Value of the content per hour throughout the year.....	47,946	427,946
Evaporation and leakage in 56 miles of canal at 6,000 cu. ft. per hour per m.....	336,000	
Lockage per hour do.....	86,430	
		422,400
Surplus		5,546

The entire length of the canal being 92.75 miles, there will then remain 56.25 miles to be supplied from other sources. Forty-one miles of this distance will devolve upon the river DuPage and the remainder upon Fox river. The river DuPage or Tokoquenone empties into the river Des Plaines 3.67 miles above its junction with the Kankakee. By an imperfect and hasty measurement of the DuPage in the fall of 1830, its minimum discharge was estimated at 415,000 cubic feet per hour, the succeeding summer and fall being remarkably wet, did not afford an opportunity of ascertaining its discharge at a low stage, but it is obvious to the observer of both streams, that its discharge must, at all times, be greater than that of the Calamic. We may rely upon its capacity to furnish the same quantity of water, that is, 320,000 cubic feet per hour, from which deduct 246,000 cubic feet, the quantity required for evaporation and leakage in forty-one miles of canal at 6,000 cubic feet per hour for every mile, and there will remain a surplus of 74,000 cubic feet per hour, which being insufficient for the consumption of the remaining 15.25 miles, the waters of Fox river can be brought into requisition to supply the deficiency. As far as the results of experience can be applied in calculating the quantity of water expended by a canal located on ground of ordinary permeability, an ample supply of water is thus provided for the whole route. Nevertheless it must be acknowledged that in the upper levels where from the scarcity of water it is most important to restrict the loss of water within the usual limits; the canal passes through so rocky and porous a section of country that it is impossible to anticipate what may be the extent of the leakage or how far the precautions ordinarily adopted may succeed in enabling the canal to retain the water.

For the sake of convenience and of more particularly designating and describing different parts of the route, the whole line of the canal is divided into five divisions.

The first division commences at the Chicago river and terminates on the south side of the Ausoganashkee swamp, forming that part of the route surveyed in the year 1830, and reported to commence at the head of navigation on the Chicago river, and after striking the river Des Plaines in its westerly course on the south side of the Portage lake, to pursue the southeast valley of that river to the Ausoganashkee swamp.

This division is 18.5 miles in length and embraces the best and least expensive part of the line, although two feeders and the reservoir are included in the estimate of cost.

Resuming the survey of 1830, at the Ausoganashkee swamp the line of the late survey continues in the southeast valley of the river Des Plaines until within half a mile of Hickory creek, it then crosses the river and encroaching upon its bed for a short distance to avoid rock excavation, is conducted by means of a narrow valley to Mount Joliet, where it falls in with the line of the railway and terminates the second division, a distance of 19.75 miles. The rock excavation which forms a large item in the cost of this division, is occasioned by the gradual rise of the rock on the summit level, and the difficulty in procuring earth for embankments on the lower levels, which in some instances renders a depression of the level and the consequent excavation of the rock more advantageous than a continuation of the level and the substitution of embankment, although under the circumstances it would be prefer-

able. The broad valley of this singular stream in places where it has much descent seems in its whole extent (far beyond the present rise of its waters) to have been swept bare of everything that was not sufficiently ponderous to resist the effects of a violent current. In these situations with the exception of occasional mounds of gravel, materials for embankment cannot be found within a distance that would justify their use except in a case of absolute necessity. Besides the expense accruing from these causes, the cost of keeping this part of the canal in repair after it is finished, must be necessarily great on account of the immense deposits of earth and the breaches to which it will be annually subjected by the numerous small streams which intersect the route and must be received into the canal as they cannot be passed under it or disposed of in any other way. The whole line is more or less exposed to this defect, but it is of more frequent occurrence in this division than in any other part of it. It is here that the rocky district of the country before alluded to, as exciting so much apprehension respecting its probable effect in exhausting the supply of water, is situated. It constituted, indeed, the most serious objection to the construction of a canal on the route in question, as enormous sums have been expended in similar locations in puddling and even planking a canal without producing the desired effect. This division is very much of the same character throughout, and includes the most expensive and unfavorable part of the line.

The third division, which is included between Mount Joliet and the river Au Sable (a distance of 15.234 miles) affords a better location than the preceding. With the valley of the Des Plaines it pursues on very favorable ground, a southerly course from Mount Joliet to the river Du Page which it crosses some distance above its mouth, receiving a feeder from it on the north side. Beyond this point the bluffs, just above the confluence of the Kankakee and Des Plaines rivers oppose serious obstacles to the construction of an economical and permanent work. On this section of the division the level is unavoidably too low to admit of the passage of many of the small streams under the canal by which means and the drainage from the hills, it will be subject to the same inconveniences and danger in wet seasons to which the division above is exposed. The soil also from being mixed with sand adheres together very slightly and when saturated with water has a great tendency to slip over where the inclination of the hill is moderate. Considerable embarrassment to the navigation of the canal may be expected from this cause besides the expense of repairs. The remaining part of this division is not very exceptionable, some extensive embankments are however required from the lowness of the banks of the Au Sable, in other respects the crossing of this river is effected in a favorable position.

From the river Au Sable to Fox river, the termination of the fourth division, the general course of the route is westerly and of good character with the exception of the elevation of the streams, of which the smaller are generally too high to be passed under the canal without great expense. The length of this division is 26.608 miles.

The 5th and last division embraces the rapids of the Illinois river, a distance 12.650 miles. In its location a high level is preserved and the bluffs of the river adhered to, until within a short distance of the foot of the rapids. By this means a comparatively good route is obtained, although from its circuitous course at the base of the precipitous rocks, which compose the bluffs and the swampy nature of the ground in some places, it presents a very unfavorable appearance. It is, however, preferable to the route on the immediate bank of the river for the construction of a canal. From the Buffalo Rock, a rocky promontory about four miles below the mouth of Fox river, to the mouth of the Little Vermilion, the verticle cliffs of the bluffs form a crescent and approach the Illinois river at the latter point, leaving a broad bottom above interspersed with swamps and sloughs, but of increased elevation near the river. The whole bottom, however, for some distance below the mouth of the Little Vermilion and for many miles above is liable to inundation, except at the point where the line of the canal leaving the bluff nearly at right angles strikes the river at the foot of the rapids; there the bank of the river has a bold shore and is above high water mark, forming a peninsula in high

water with an area of about 200 acres. The local advantages it possesses for the establishment of a depot and the facilities afforded by its situation for the transaction of the business incidental to the progress of this important work are sufficient to render it the most eligible point at the foot of the rapids for the termination of the canal, independent of the great difficulty and expense of extending it farther. The mouth of the Vermilion river three miles below the point above mentioned has been considered the head of navigation on account of a gravelly bar at its mouth extending obliquely across the Illinois river. There is good reason to believe, nevertheless, that the water on this bar never falls short of four feet, but on the supposition that there is, at any time, much less, the annual expense of deepening the channel to five or six feet will bear no comparison to the interest of the cost of extending the canal below it even on ground more favorable for its construction. Between the bar and the foot of the rapids, the water in the river is very deep, particularly at the point selected for the mouth of the canal.

By a reference to the estimates it will be perceived that the total cost of the different divisions of the canal, as described above, and the amount of lockage on each, stands thus:

Cost of 1st division.....	\$186,240 20	Lockage.....	\$ 8 50
Cost of 2nd division.....	487,722 39	Lockage.....	68 00
Cost of 3rd division.....	235,215 74	Lockage.....	11 00
Cost of 4th division.....	411,874 68	Lockage.....	29 00
Cost of 5th division.....	290,642 83	Lockage.....	40 37
Total cost whole line.....	\$1,601,695 83	Total amount lockage.....	\$156 87

The entire length of the route of the canal being 92.75 miles, the average cost per mile founded on the estimates will consequently amount to \$17,270.

In making a feeder of Lake Michigan, by cutting through the the dividing ridge between the lake and the head waters of the Illinois river the location of the canal is the same throughout as the foregoing, it being important in both plans to choose the lowest ground for the Summit Level, the arrangement of the lower levels being governed by the same indications in each. In the survey of 1830 of the upper part of the route, assuming the bottom of the canal at the head on the Chicago river, to be four and one-half feet below the level of the lake, no rock excavation is encountered until the line strike the river Des Plaines, where it was ascertained by the boring to average about ten feet and the earth excavation about six feet in depth throughout the remaining distance of nine miles. By the late survey, beyond the Ausoganashkee Swamp, the rock excavation was found to increase in depth for several miles, on account of the greater elevations of the rock which I have before had occasion to advert to in describing the location of the second division. The divisions of the route upon this plan, are the same as in the former, of which first and second division it will be observed by referring to the estimates, are liable to any increase in the cost of construction, arising from the difference of plan, yet this increase amounts to upwards of two millions and a half, a fact that may be thought sufficient of itself to put the execution of the work on this plan entirely out of the question: Still it may not be superfluous to remark that although in the estimate of the probable cost of the work, a liberal price is allowed for the rock excavation, the most important item; besides a sum amply sufficient to cover the ordinary contingent expenses, yet it is hardly possible to anticipate the limits of the expenditure when we consider that the bulk of the rock excavation lies below the rocky bed of the river Des Plaines and the interruption that the work will consequently be liable to from the water of the river finding its way through the numerous fissures of the rock into the canal.

It has been also proposed to effect a water communication between the Lake and the Illinois river by means of dams and locks in the river Des Plaines, forming a still water navigation, knowing the minimum discharge of this river, the impracticability of the scheme is so evident that the subject is here noticed more as a matter of form, than with any expectation of render-

ing it clearer. It will be recollected that the quantity of water provided for the passage of 96 boats over the Summit Level every 24 hours in the canal, is 86,400 cubic feet per hour, that is one lock chamber full of water every 15 minutes, ascending and descending.

The minimum discharge of the river DesPlaines is only 60,000 cubic feet per hour. Of course, it is not competent to supply even the lockage (which on this plan cannot be less than that required for the canal) without taking into consideration the loss by evaporation and leakage, which would alone consume at least seven times the quantity of water discharged by the river DesPlains at its lowest stage.

In the rocky and cavernous district of country to which the location of the great part of the route of the canal is confined, there are too many difficulties to be reasonably apprehended in carrying it into successful operation, to justify the establishment of a water communication on any route or plan whatever, while however so many obstacles are opposed to the construction of a canal, the examination of the route for a railway was very successful in developing its great advantages for the adoption of that species of improvement. The line of the canal commencing at the Chicago river and occupying the south bank of the river DesPlaines, being of very exceptionable character for a railway and the inclination of the grades of the latter admitting of greater latitude in its location, the route for a railroad was commenced at the junction of the north and south forks of the Chicago river in the town of Chicago on Lake Michigan, and from thence run in a sight line through a level open prairie, north of the Portage Lake to the upper ford of the river DesPlaines, commonly called Laughton's ford, a distance of ten miles from Chicago; it crosses the river at this point, which is advantageously situated for that purpose, and pursues the northwest valley of the river DesPlaines until it forms a junction with the line run for a canal, a short distance below a remarkable natural mound called Mount Joliet, 38.258 miles from Chicago. This distance includes the 1st and 2nd divisions of the line of the railway, the remaining part of the route (57.742 miles) corresponds in the limits of its division with those of the canal, although the location is not entirely the same, the inclinations of the railway frequently allowing a better selection of ground than that to which the levels of the canal are confined.

The graduation of the first ten miles through the Chicago prairie, generally conforms to the surface of the ground which varies in its inclination from 2 to 13 feet to the mile. The want of stone and timber which exists on this part of the line can in a great measure be obviated by commencing the construction of the railway at the river DesPlaines, where these materials can be obtained in abundance, stone of a very good quality. The estimates of the probable cost of this section of the 1st division are founded upon the adoption of this expedient for lessening the cost of the transportation of materials. Beyond the river DesPlaines, the 1st division extends to Flag Creek which empties into it 9.618 miles below the upper ford. The ground upon which this part of the line is located, is generally very level, the graduation which does not require much excavation or embankment, not exceeding 13 feet to the mile. Curves are, however, frequent, but not very abrupt, the minimum radius of curvature being 955 feet. Materials are found in sufficient quantity in the vicinity of the line.

Crossing the above mentioned creek obliquely about a mile and a half above its mouth, the line of the railway descends the valley of the creek to that of the river DesPlaines, where it continues its course until it strikes a succession of swamps, occupying the whole breadth of the valley of the river and running nearly to the top of the bluff. They are about two miles in extent, but from the favorable circumstance of their being generally shallow with a rock foundation, no great difficulty of expense is anticipated in passing them by an embankment. The line as first run, in order to avoid them as much as possible and to obtain firm ground, ascends the side of the bluff which involves the necessity of a graduation of 24 and 31 feet to the mile, but as the survey of the entire line has developed the fact that 20 feet to the mile may be considered the maximum rate of graduation on every other part of the route it becomes necessary even at a great increase of cost to equalize the graduation at this point. For whatever propelling power is used on the road

it will, of course, be calculated to overcome the greatest resistance to be met with on any part of the road, consequently it is of great importance to avoid the necessity of providing a propelling power to overcome an ascent of 31 feet to the mile at one point only, while on no other part of the route a greater power is required than that necessary for an ascent of 20 feet to the mile.

By changing the location at this place so as to run the line between the base of the bluff and the river, a reduction of the graduation from 31 feet to the mile to a comparative level can be effected, which will require an embankment elevated some feet above the level of the swamps, for nearly two miles. In the estimates of the cost of this division an ample allowance is made for effecting this object, the importance of which route justify a much larger expenditure.

With the exception of a morass of no great extent, caused, like those above mentioned, by springs and the proximity of the rock to the surface, where a more deliberate examination may be of service, the residue of the route comprising the second division which terminates at Mount Joliet, is not susceptible of much improvement in the location.

The highest rate of graduation with the above improvement in the line, is 20 feet to the mile, and the minimum radius of curvature 800 feet. Stone of excellent quality is abundant on this division, timber also can be obtained in sufficient quantities near the line.

The third division of the railway, which commences at Mount Joliet and terminates at the river Au Sable, a distance of 15.234 miles, is nearly coincident throughout with that of the canal. To both works, the bluffs at the head of the Illinois river present some obstacles and occasion a very circuitous location for four miles, which for a railway particularly it is desirable to avoid, as the route elsewhere admits of a much more favorable degree of curvature. It is highly probable that a better route from Mount Joliet to the river Au Sable may be obtained by a careful and deliberate examination of the country north of the line as now located. The line will then leave the valley of the Des Plaines at Mount Joliet and occupy a pass through which the surplus waters of the river Des Plaines were probably once discharged, crossing the river Du Page about three miles above its mouth. This route will be somewhat shorter than the other and if practicable, at a rate of graduation not exceeding 20 feet to the mile, a most valuable substitute for it, as the curves will probably be few in number and not restricted to a less radius than 800 feet, while around the bluffs they are numerous and necessarily abrupt, some of them having a radius of 400 feet. Curves corresponding to this and even to smaller radii are used in the Baltimore & Ohio Railway and in other railways in the United States without much impeding the passage of locomotives, since the recent improvement in their construction, but they are to be avoided, if possible, at any reasonable cost, and especially at the point in question, as the efficiency of locomotive engines on every other part of the road will be lessened by the necessity of adapting the size of the wheel and their general construction to a movement on an abrupt curve. The apparent practicability of effecting the above-mentioned improvement in the route for a railway was observed in the progress of the late survey, but it was found impossible to devote the time required for its examination without interfering with the completion of the survey of the remaining part of the route, during the season and the performance of other duties. At the termination of the bluffs, the bottom of the Illinois river expanded into a gravelly plain, through which the line runs to the river Au Sable, a small stream with low banks and a rocky bottom. It crosses this river at a favorable point, one mile from its mouth, and traverses a gravelly plain similar to the one just mentioned; and ascending the second bank of the Illinois river, takes its course through a level prairie to the waters of Brian creek, the north and south forks of which it crosses severally at points well situated for the construction of bridges.

Beyond the south fork the route pursues a fine, gravelly ridge for a short distance, and descends into a level prairie, occasionally interspersed with depressions in the surface, forming receptacles in wet seasons for the water from the hills. This prairie continues for ten miles to the head of the Kicka-

poo rapids of the Illinois river. Thence the line inclines to the base of the bluff, avoiding the wet grounds below, until it arrives within three miles of Fox river. The route of the railway then diverges from the canal line which it has generally coincided with, and, approaching the river, runs through the level bench forming the second bank of the Illinois river to Fox river, a distance of 27 miles from the river Au Sable, by the line of the railway. Materials of stone and timber are not so abundant in the immediate vicinity of the two last named divisions as above, yet they can be procured of good quality without much trouble or expense. The minimum radius of curvature on the fourth division is 995 feet, the graduation rarely attains 20 feet to the mile.

The viaduct across Fox river, the most important work of the kind on the route, is included in the fifth division. At the site selected for its location the river flows over a level rock bottom to the depth of from two to three feet in low water, affording an excellent foundation for the piers and abutments of the bridge. The whole of this division is traced on ground highly favorable to a moderate degree of graduation and curvature, the latter not requiring a less radius than 995 feet and the former not exceeding an inclination of 20 feet to the mile. The graduation is, however, rendered expensive at the lower end of the route by the heavy embankments required in crossing the outlet of swamps and in elevating it above high water mark. The pavement of the banks also intended to protect them against the abrasion of the waves and current of the river, when high, is a considerable item of expense, which may probably be dispensed with.

From Fox river the line of the railway inclines towards the Illinois river, and passing through the western precincts of the town of Ottawa, descends on a line nearly parallel with the course of the river to the Buffalo Rock, four miles below the mouth of Fox river, thence through a narrow pass between the rock and the bluff, to the high grounds on the margin of the river, to which it adheres, crossing the outlets of the swamps lying on the right of the line to the foot of the rapids, finishing its course at the point before described as the termination of the canal.

In estimating the probable cost of the graduation the width of the bed of the road in excavation is supposed to be 13 feet, and in embankment 15 feet, with slopes in both of $1\frac{1}{2}$ feet base to every foot perpendicular rise.

The bridges and culverts are calculated for a double track 30 feet in width wherever the increase of business on the road may render an additional track necessary. In every other particular the estimates are intended for a single track only. The width between the inner edges of each rail is assumed at 4.75 feet. The rails to be laid upon continuous stone sills not less than three feet each in length, nor to contain less than a cubic foot on the cross section of a foot in the length of the stones, to be laid in trenches and embedded in broken stone to the depth beneath the under surface of the sill, and at the sides of not less than six inches, well rammed and consolidated. Sills of timber connected transversely by slabs are to be first laid on embankments. The iron rails proposed to be laid on this road are much heavier than usual, being convinced from personal observation, as well as from the opinions of practical men, that the iron ordinarily used in the United States for railways is entirely too thin for a permanent work traversed by heavy locomotive engines. The proposed rail is a rolled iron edge rail, with a base of four inches and a convex upper surface of two inches, the intermediate length of the rail being contracted to a thickness of one inch. This rail being laid along the center of the sills will, of course, have a continuous even bearing upon them without that tendency to derange their position, which is the effect of the usual manner of laying the rails near the inner edge of the sills. A defect in the foundation of the sill at the joints is also less liable to affect the position of the edge rail, the base of the rail having so many points of support that the pressure of a load is sustained by a more extended surface than the use of their rails will allow, the latter being forced, from the want of strength, to conform to every depression of the sills. The employment of an edge rail of the above description in the construction of the Illinois and Michigan Railway is contemplated for the purpose of perfecting its adaption to the use of steam as a moving power, for which it is eminently fitted by the moderate

rate of graduation and curvature which the route admits of, the uncommon advantage of being located in the vicinity of inexhaustible supplies of fuel, considerable quantities of which can be procured near the line at the mouth of Fox river. The most extensive bank of coal, however, is situated at the mouth of the Big Vermilion river, a short distance from the lower extremity of the line. The use of steam power is further recommended by its exemption from one of the bad effects attending the employment of horses. In all railroads where they are used the action of the horses' feet on the horse path, by consolidating and wedging in the material of the road between the rails, has the effect of forcing asunder the sills of the rails, causing them thereby to recede from each other transversely. The constant operation of this cause produces more or less derangement of the rails throughout a line of road and finally renders it necessary to relay them, which on a road with a single way constitutes a more serious objection to the employment of horse power than in a double track, where the repairs of the road would not so much interfere with the transportation.

It is thought that the superior permanency of the rolled iron edge-rails and the greater degree of stability which they give to the sills upon which they are laid, will, in the end, render them more economical than bar iron rails. Should it be deemed advisable, however, to use the latter, such for instance as are used in the Baltimore & Ohio Railroad (2 inches by ⁵/₈) the total probable cost of the ninety-six miles of railroad may be placed at \$907,488.19 or \$9,453 per mile, making a difference in the cost of the two descriptions of rails of \$145,000.

In reviewing the capabilities of the country between Chicago and the foot of the rapids of the Illinois river for the construction of a canal or railroad, it would seem (laying aside the great difference of expense) that the obstacles opposed by nature to the formation of a good canal on any route or plan whatever, are such that nothing could justify the undertaking, but the fact of its being the only means of attaining the accomplishment of so important an object as the improvement of the communication between the above mentioned points. For this reason, the unparalleled advantages presented on the route of the railway for the construction of a very perfect and prominent work, are invested with additional value in inviting the adoption of an alternative, the ultimate success of which is warranted by experience in the successful operation of many similar works both in Europe and the United States, none of which can compete with it in economy of construction or perfection when finished.

In the examination of the rapids of the Illinois river below the mouth of Fox river (one of the duties prescribed by the State Legislature of 1830-1) it was ascertained that the establishment of a still water navigation was the most certain and effectual method of improving them. It is nevertheless considered of too precarious a nature to be recommended with any degree of confidence in its permanency and usefulness as a substitute for a construction of the railway. The bank of the river, as has been before remarked, expands into a broad, low bottom for some miles above the foot of the rapids, which in high water is liable to inundation to a considerable depth. A steamboat canal, therefore, with high embankments become necessary through these low grounds for two miles and a half, to connect the nearest point where the river is capable of being dammed; with the river below the foot of the rapids no situation probably can afford a better site and foundation for a dam of the same length, but the immense bodies of ice passing down the river situated in so high a latitude must expose it to great danger and render it a very insecure and expensive structure. The canal requires heavy and expensive embankments, the materials for which it will be difficult to obtain in sufficient quantity. Besides these considerations the cost of improving the navigation of the rapids in a substantial manner can not fall short of \$200,000, while that of the construction of the railway below the mouth of Fox river, including the viaduct, amounts to \$30,000 less, as may be seen by a reference to that part of the estimates denominated the fifth division of the railway.

Annexed to this paper will be found an estimate of the probable cost of each division of the canal and railway and of all the improvement of the rapids of the Illinois river. All of which, together with the maps and profiles illustrating the different lines surveyed, are respectfully submitted.

J. M. BUCKLIN,

VANDALIA, Jan. 1, 1833.

Engineer Illinois and Michigan Canal.

ESTIMATES.

Illinois and Michigan Canal on the plan of elevating the summit level 10 feet above the level of Lake Michigan.

*First Division from the Chicago river to the Ausoganashkee swamp
18.5 miles.*

150 ch. grubbing, at \$9.....	\$1,350 00	
617,884 cubic yards of excavation, at 9c.....	35,582 00	
16,691 cubic yards of excavation, at 20c.....	3,338 20	
51,333 cubic yards of embankment, at 15c.....	7,700 00	
19,000 cubic yards of excavation ditching, at 9c.....	1,710 00	
1,478 perches masonry in lock, at \$4.50.....	6,651 00	
Embankment, puddles, etc.....	600 00	
		\$76,931 20
DES PLAINES FEEDER.		
15,000 cubic yards embankment, at 16c.....	\$2,400 00	
Puddling and mucking.....	960 00	
Dam.....	6,000 00	
		9,360 00
CALAMIC FEEDER.		
200 ch. grubbing, at \$9.00.....	\$1,800 00	
184 ch. grubbing, at \$7.00.....	1,288 00	
436,640 cubic yards excavation, at 8c.....	35,467 20	
110,564 cubic yards embankment, at 12c.....	13,267 68	
7,250 cubic yards mucking, at 9c.....	652 50	
1,000 perches masonry, guard lock, at \$4.50.....	4,500 00	
Embankment, puddle, etc.....	420 00	
Waste weirs.....	1,000 00	
Dam.....	6,250 00	
		62,675 38
AUSOGANASHKEE RESERVOIR.		
30,000 cubic yards embankment, at 20c.....	\$6,000 00	
Bulkhead, etc.....	5,000 00	
Waste weirs, puddling.....	1,537 42	
		12,537 42
Superintendence and contingencies, 15 per cent.....		\$161,948 00
		24,292 20
Total probable cost of the first division.....		\$186,240 20

*Estimates—Continued.**Second Division from the Ausoganashkee swamp to Mount Joliet,
19.758 miles.*

240 chains grubbing, at \$10.00	\$2,400 00	
419,544 cubic yards earth excavation, at 8c	33,563 52	
31,200 cubic yards single embankment, at 16c	4,992 00	
188,063 cubic yards double embankment, at 20c	37,612 60	
121,461 cubic yards double embankment, at 12c	14,575 32	
60,000 cubic yards mucking and ditching, at 8c	4,800 00	
204,640 cubic yards rock excavation, at \$1.25	255,800 00	
2 locks, 4 ft. lift, 2,020 perches, at \$4.00	8,080 00	
5 locks, 8 ft. lift, 7,065 perches, at \$3.25	22,961 25	
2 locks, 10 ft. lift, 3,326 perches, at \$3.75	12,472 50	
Embankment, puddling, etc	4,500 00	
1 culvert, 20 ft. cord, 670 perches, at \$2.75	1,842 50	
3 culverts, 15 ft. cord, 1,275 perches, at \$2.00	2,550 00	
4 culverts, 8 ft. cord, 1,000 perches, at \$2.50	2,500 00	
Pits, etc	5,900 00	
		\$410,509 69
DES PLAINES AQUEDUCT—2 SPANS, 80 FEET EACH.		
3,856 perches masonry, at \$2.50	\$9,640 00	
175 lineal feet of track, at \$17.00	2,975 00	
Foundation	980 00	
		13,595 00
Superintendence and contingencies, 15 per cent.		\$424,104 69
		63,615 70
Total cost of the second division		\$487,722 39

*Third Division from Mount Joliet to the River Au Sable,
15.234 miles.*

320 chains grubbing, at \$3.00	\$2,500 00	
45,000 cubic yards mucking and ditching, at 8c	3,600 00	
451,650 cubic yards earth excavation, at 9c	40,648 50	
28,600 cubic yards for berms, at 8c	2,288 00	
168,222 cubic yards double embankment, at 15c	24,933 30	
141,365 cubic yards single embankment, at 13c	18,377 65	
32,000 cubic yards rock excavation, at \$1.25	40,000 00	
1 lock of 11 feet lift, 1,800 perches, at \$4.50	8,100 00	
Embankment, puddle, etc	620 00	
1 culvert of 30 ft. cord, 1,455, at \$2.75	4,000 00	
Pit and foundation	970 00	
1 culvert of 15 ft. cord, 400, at \$2.50	1,000 00	
2 culverts of 10 ft. cord, 490, at \$2.75	1,347 50	
4 culverts of 8 ft. cord, 1,175, at \$2.50	2,937 50	
6 culverts of 6 ft. cord, 685, at \$2.50	1,712 55	
Pits, etc	8,450 00	
800 perches protection wall, at \$1.50	1,200 00	
3,500 square yards pavement, at 50c	1,750 00	
2,000 square yards pavement, at 60c	1,200 00	
		\$169,146 00
DU PAGE AQUEDUCT—2 SPANS, EACH 80 FEET.		
2,317 perches masonry, at \$3.00	\$6,951 00	
175 lineal feet track, at \$17.00	2,975 00	
Foundation	1,500 00	
		11,426 00
AU SABLE AQUEDUCT—2 SPANS, EACH 80 FEET.		
2,317 perches masonry, at \$3.00	\$6,951 00	
175 lineal feet track, at \$17.00	2,975 00	
Foundation	2,450 00	
		12,376 00

Estimates—Continued.

DU PAGE FEEDER.		
24 chains grubbing, at \$5.00	\$120 00	
2,400 cubic yards mucking, at 8c	192 00	
44,258 cubic yards excavation, at 8c	3,540 64	
22,953 cubic yards double embankment, at 13c	2,983 89	
13,309 single embankment, at 10c	1,230 90	
Dam	3,520 00	
		\$11,587 43
Superintendence and contingencies, 15 per cent		\$204,535 43
Total cost of third division		\$235,215 74

*Fourth Division from the River Au Sable to Fox River,
26.608 miles.*

140 chains grubbing, at \$9.00	\$1,260 00	
155,000 cubic yards mucking and ditching, at 9c	13,950 00	
516,265 cubic yards earth excavation, at 9c	46,463 85	
67,840 cubic yards earth excavation, at 17c	11,532 80	
256,925 cubic yards embankment, at 3c	33,400 25	
146,110 cubic yards rock excavation, at \$1.25	182,637 50	
2 locks of 10 ft. lift, 3,325 perches, at \$4.50	14,987 00	
1 lock of 9 ft. lift, 1,545 perches, at \$4.50	6,932 50	
Embankments and foundation	1,540 00	
1 culvert, 30 ft. cord, 1,500 perches, at \$2.75	4,125 00	
Foundation	2,000 00	
1 culvert, 30 ft. cord, 1,500 perches, at \$2.75	4,125 00	
Foundation	1,200 00	
3 culverts, 20 ft. cord, 1,840 perches, at \$2.75	5,000 00	
Foundation, etc	2,500 00	
1 culvert, 15 ft. cord, 485 perches, at \$2.75	1,333 75	
Foundation, etc	700 00	
1 culvert, 10 ft. cord, 247 perches, at \$2.75	679 65	
5 culverts, 8 ft. cord, 1,000 perches, at \$2.75	2,750 00	
5 culverts, 6 ft. cord, 614 perches, at \$2.75	1,688 50	
Foundation, etc	5,850 00	
		\$346,337 90
AQUEDUCT ACROSS RATTLE SNAKE CREEK—2 SPANS, 40 FEET EACH.		
2,000 perches masonry, at \$2.50	\$5,000 00	
95 lineal feet track, at \$10.00	950 00	
Foundation	450 00	
		6,400 00
3,600 square yards pavement, at 65c	\$2,340 00	
10,246 cubic yards puddle, at 30c	3,074 00	
		5,414 00
Superintendence and contingencies, 15 per cent		\$358,151 90
Total cost of the fourth division		\$411,874 68

*Estimates—Continued.**Fifth Division from Fox river to the Foot of the Rapids of the Illinois River, 12.650 miles.*

FOX RIVER AQUEDUCT—6 SPANS, 85 FEET EACH.		
5,080 perches masonry, at \$2.50.....	\$12,700 00	
552 lineal feet track, at \$18.00.....	9,936 00	
Foundation.....	2,000 00	\$24,636 00
142 chains grubbing, at \$7.00.....	\$994 00	
46,700 cubic yards mucking and ditching, at 9c.....	4,203 06	
169,888 cubic yards earth excavation, at 9c.....	15,289 92	
33,978 cubic yards earth excavation, at 7c.....	2,378 46	
180,960 cubic yards double embankment, at 20c.....	36,192 00	
396,350 cubic yards single embankment, at 15c.....	59,452 50	
13,978 cubic yards rock excavation, at \$1.00.....	13,978 00	
23,436 square yards pavement, at 75c.....	17,577 00	
35,190 square yards pavement, at 50c.....	17,595 00	
1 lock of 10 ft. lift, 1,663 perches, at \$4.00.....	6,652 00	
1 lock of 9.37 ft. lift, 1,589 perches, at \$4.00.....	6,356 80	
1 lock of 8.50 ft. lift, 1,413 perches, at \$4.00.....	5,652 00	
1 lock of 13 ft. lift, 2,025 perches, at \$4.50.....	9,112 25	
Embankment and pits, etc.....	2,240 00	
1 culvert of 20 ft. cord, 630 perches, at \$2.75.....	1,732 50	
Foundation.....	1,400 00	
1 culvert, 20 ft. cord, 785 perches, at \$2.75.....	2,158 75	
Foundation.....	580 00	
1 culvert of 15 ft. cord, 510 perches, at \$2.75.....	1,402 50	
Foundation.....	400 00	
1 culvert of 12 ft. cord, 291 perches, at \$2.75.....	800 25	
Foundation.....	900 00	
2 culverts of 10 ft. cord, 535 perches, at \$2.75.....	1,471 25	
3 culverts of 8 ft. cord, 686 perches, at \$2.75.....	1,886 50	
Foundation.....	2,000 00	
2 waste weirs.....	1,675 00	202,078 88
FOX RIVER FEEDER.		
19 chains grubbing, at \$9.00.....	\$171 00	
35,813 cubic yards excavation, at 8c.....	2,865 04	
33,511 cubic yards single embankment, at 12c.....	4,021 32	
3,200 yards mucking, at 8c.....	256 00	
Dam.....	10,000 00	17,313 36
Superintendence and contingencies 15 per cent.....		\$244,037 94
Total cost of the fifth division.....		36,605 58
		\$280,642 82

RECAPITULATION.

Total cost of the first division.....	
Total cost of the second division.....	
Total cost of the third division.....	
Total cost of the fourth division.....	
Total cost of the fifth division.....	
Entire line.....	\$1,

Estimates—Continued.

Estimate of the probable cost of a canal on the same location, but supplied with water from Lake Michigan, by cutting through the dividing ridge between the Lake and the head waters of the Illinois river.

Cost of the canal from the Chicago river to the Ausoganashkee swamp as estimated in 1880.....		\$1,287,061 00
240 chains grubbing, at \$10.00.....	\$2,400 00	
60,000 cubic yards mucking and ditching, at 8c.....	4,800 00	
471,878 cubic yards earth excavation, at 8c.....	37,750 24	
110,600 cubic yards earth excavation, at 15c.....	16,590 00	
31,200 cubic yards single embankment, at 16c.....	4,992 00	
188,063 cubic yards double embankment, at 20c.....	37,612 60	
121,460 cubic yards double embankment, at 12c.....	14,575 32	
892,920 cubic yards rock excavation, at \$1.40.....	1,250,088 00	
3 locks of 8 ft. lift, 4,239 perches, at \$3.25.....	13,776 75	
1 lock of 8.5 ft. lift, 1,478 perches, at \$3.25.....	4,803 50	
2 locks of 10 ft. lift, 3,326 perches, at \$3.75.....	12,472 50	
1 lock of 4 ft. lift, 1,010 perches, at \$4.00.....	4,040 00	
Embankment, etc.....	2,500 00	
1 culvert of 20 ft. cord, 870 perches, at \$2.75.....	1,842 50	
2 culverts of 15 ft. cord, 875 perches, at \$2.75.....	2,406 25	
1 culvert of 8 ft. cord, 231 perches, at \$2.75.....	635 25	
Foundation, etc.....	3,009 00	
Des Plaines aqueduct.....		1,410,244 91
Estimate of cost of the third, fourth and fifth divisions.....		11,677 00
		906,724 57
Superintendence and contingencies 15 per cent.....		\$3,515,727 48
		527,359 12
Total cost.....		\$4,043,066 50

ILLINOIS AND MICHIGAN RAILWAY.

*First Division, from the town of Chicago to Flag creek,
19.618 miles.*

466 chains grubbing, at \$4.00.....	\$1,864 00	
43,302 cubic yards excavation, at 8c.....	3,464 16	
30,093 cubic yards embankment, at 12c.....	3,611 16	
18,312 cubic yards embankment, at 15c.....	2,747 30	
3 culverts of 4 ft. cord 150 perches, at \$2.75.....	412 50	
Foundation, etc.....	500 00	
1 culvert of 8 ft. cord 117 perches, at \$2.75.....	321 75	
Foundation, etc.....	450 00	
1 culvert of 20 ft. cord 360 perches, at \$2.50.....	900 00	
Foundation, etc.....	950 00	
Pavement at culverts 200 square yards, at 50c.....	1,000 00	
		\$15,320 87
DES PLAINES VIADUCT—120 FEET SPAN.		
1,250 perches masonry, at \$2.50.....	\$3,125 00	
132 lineal feet of superstructure, at \$20.00.....	2,640 00	
Foundation.....	500 00	
		6,265 00
Cost of grading the first division.....		\$21,585 87

*Estimates—Continued.**Second Division from Flag creek to Mount Joliet, 22.643 miles.*

383 chains grubbing, at \$4.00	\$1,532 00	
360 chains grubbing, at \$3.00	1,080 00	
240 chains grubbing, at \$2.00	480 00	
57,083 cubic yards excavation, at 8c	4,566 64	
56,000 cubic yards embankment, at 23c	9,000 00	
33,473 cubic yards embankment, at 12c	4,116 76	
20,000 cubic yards embankment, at 14c	2,800 00	
10 culverts of 4 ft. cord 485 perches, at \$2.75	1,333 75	
Foundation, etc	1,060 00	
5 culverts of 8 ft. cord 587 perches, at \$2.75	1,614 25	
Foundation, etc	1,000 00	
8 culverts of 4 ft. cord 376 perches	940 00	
Pits	465 00	
5 culverts of 8 ft. cord 600 perches, at \$2.50	1,500 00	
Pits	500 00	
2 culverts of 15 ft. cord 540 perches, at \$2.50	1,350 00	
Pits	380 00	
Cost of graduating the second division		\$33,418 40

ILLINOIS AND MICHIGAN RAILWAY.

*Third Division from Mount Joliet to the River Au Sable,
15.234 miles.*

423 chains grubbing, at \$5.00	\$2,115 00	
105 chains grubbing, at \$4.00	420 00	
81,356 cubic yards, excavation, at 8c	6,508 00	
41,422 cubic yards embankment, at 12c	4,970 64	
8,500 cubic yards embankment, at 15c	1,275 00	
1 culvert of 30 ft. cord 1,127 perches, at \$2.75	3,098 25	
Foundation, etc	1,000 00	
1 culvert of 15 ft. cord 390 perches, at \$2.50	750 00	
Foundation, etc	500 00	
2 culverts of 10 ft. cord 414 perches at \$2.75	1,138 50	
Foundations, etc	1,000 00	
5 culverts of 8 ft. cord 641 perches, at \$2.50	1,602 50	
Foundation, etc	1,600 00	
17 culverts of 4 ft. cord 910 perches, at \$3.00	2,730 00	
Foundation	3,200 00	
Pavement on banks 1500 square yards, at 50c	750 00	
Pavement on culverts 2,500 square yards, at 60c	1,500 00	
Protection wall 800 perches at \$1.50	1,200 00	
DUPAGE VIADUCT—120 FOOT SPAN.		\$35,358 89
1,000 perches masonry, at \$3.00	\$3,000 00	
132 lineal feet of superstructure, at \$20.00	2,640 00	
Foundation	500 00	
AU SABLE VIADUCT—2 SPANS OF 80 FEET EACH.		\$6,140 00
1,177 perches masonry, at \$3.00	\$3,531 00	
178 lineal feet of superstructure, at \$16.00	2,848 00	
Foundation	1,600 00	
Cost of graduating the third division		\$7,979 00
Cost of graduating the third division		\$49,477 89

Estimates—Continued.

ILLINOIS AND MICHIGAN RAILWAY.

*Fourth Division from the River Au Sable to Fox River
27.006 miles.*

185 chains grubbing, at \$4.00.....	\$740 00	
57,288 cubic yards excavation, at 8c	4,583 04	
62,036 cubic yards embankment, at 12c	7,444 32	
18,002 cubic yards embankment, at 14c	2,520 28	
1 culvert of 30 ft. cord 1,236 perches, at \$2.75.....	3,399 00	
Foundation	650 00	
1 culvert of 30 ft. cord 1,236 perches, at \$2.75.....	1,460 00	
Foundation	1,460 00	
3 culverts of 20 ft. cord 1,140 perches, at \$2.75.....	3,135 00	
Foundation	1,500 00	
1 culvert of 15 ft. cord 335 perches, at \$2.75.....	921 25	
Foundation	380 00	
1 culvert of 10 ft. cord 200 perches, at \$2.75.....	550 00	
Foundation	158 00	
10 culverts of 8 ft. cord 1,200 perches, at \$2.75.....	3,300 00	
Foundations	2,000 00	
13 culverts of 4 ft. cord 665 perches, at \$2.75.....	1,828 25	
Foundations.....	1,000 00	
2,286 square yards pavement, at 55c.....	1,485 90	
		\$40,346 00
RATTLE SNAKE CREEK VIADUCT—2 SPANS 40 FEET EACH.		
1,616 perches masonry, at \$2 50.....	\$4,040 00	
95 lineal feet of superstructure, at \$10.00.....	950 00	
Foundation	400 00	
		\$5,390 00
Cost of graduating the fourth division.....		\$45,736 00

*Fifth Division from Fox River to the foot of the Rapids, 11.439
miles.*

80 chains grubbing, at \$4.00.....	\$320 00	
16,366 cubic yards earth excavation, at 8c	1,309 28	
14,747 cubic yards embankment, at 12c	1,767 64	
75,356 cubic yards embankment, at 15c	10,553 40	
2,408 cubic yards rock excavation, at 75c	1,806 00	
1 culvert of 20 ft. cord 440 perches, at \$2.75.....	1,210 00	
Foundation	600 00	
1 culvert of 20 ft. cord 440 perches, at \$2.75.....	1,210 00	
Pit.....	160 00	
2 culverts of 15 ft. cord 674 perches, at \$2.75.....	1,853 50	
Foundations	650 00	
2 culverts of 8 ft. cord 257 perches, at \$2.75.....	706 75	
Foundations	380 00	
4 culverts of 4 ft. cord 200 perches, at \$2.75.....	550 00	
Foundations	380 00	
200 perches masonry in bridges, at \$2.75.....	550 00	
36,192 square yards pavement, at 50c.....	18,098 58	
		\$42,085 07
FOX RIVER VIADUCT—4 SPANS OF 135 FEET EACH.		
35,151 perches masonry, at \$2 50.....	\$8,787 50	
570 lineal feet of superstructure, at \$21.00.....	11,970 00	
Foundation	1,500 00	
		22,257 50
Cost of graduating the fifth division.....		\$64,342 57
Laying 11.439 miles of single track railway, at \$7,298.40 per mile, amounts to.....		83,896 39
		\$147,828 96
Superintendence and contingencies, 15 per cent.....		22,174 20
Total cost of the fifth division		\$170,003 16

Estimates—Continued.

ILLINOIS AND MICHIGAN RAILWAY.

Estimate in detail of the cost of rails per mile and of laying the same on the Illinois and Michigan Railway.

Quarrying one block of stone 5 feet long, at .095c.....	\$0.4750	
Cutting and dressing same, at .0875c.....	0.4375	
Hauling same, at .0700c.....	0.3500	
Laying same in the railway and consolidating the broken stone, at .0725c.....	0.3625	
2, 112 blocks per mile of track.....	\$1.6250	\$3.432 00
Adjusting and drilling the holes, stone rails, per foot. \$0 03		
Plugging same and spiking on the iron rails, per foot.. 0 01		
Per foot..... \$0 04		
Which is 20c per block for 2, 112 blocks per mile.....		422 40
1, 000 perches broken stone, at 75c.....		750 00
Iron edge rail 32 pounds to the yard, 5, 028 tons at \$50.00 per ton.....		2, 514 00
Iron fastenings.....		180 00
Cost per mile, exclusive of graduation.....		\$7, 298 40

Recapitulation of the probable cost of graduation in each division.

First division.....	\$21, 585 87	
Second division.....	33, 419 40	
Third division.....	49, 477 89	
Fourth division.....	45, 738 00	
Fifth division.....	64, 342 57	
To which add the laying of 96 miles of single track railway, at \$7, 298.40 per mile.....		\$214, 560 73
		700, 646 40
Superstructure and contingencies, 15 per cent.....		\$915, 207 13
		137, 286 06
Total cost of the whole line.....		\$1, 052, 488 19

RAPIDS OF THE ILLINOIS RIVER.

Probable cost of improving the navigation dam across the Illinois River, 2,232 feet in length.

74 cribs, at \$50.00.....	\$3, 700 00	
56, 588 perches stone, at \$1.00.....	56, 588 00	
78, 120 feet plank, at 4c.....	3, 124 80	
600 perches masonry, at \$2.25.....	1, 350 00	
		\$64, 762 80
STEAMBOAT CANAL.		
46, 883 cubic yards rock excavation, at \$1.00.....		46, 000 00
17, 600 cubic yards embankment, at 20c.....		35, 200 00
2 culverts of 15 foot cord, 1, 235 perches, at \$2.75.....		3, 396 25
Foundation.....		2, 300 00
1 lock of 10 ft. lift, cut in rock, 5, 555 perches, at \$1.40.....		7, 777 00
Gates, etc.....		3, 600 00
20, 000 square yards pavement on tracks, at 50c.....		10, 000 00
6, 277 cubic yards rubble, at 30c.....		1, 883 10
Superintendence and contingencies, 15 per cent.....		\$174, 618 15
		26, 192 72
Total amount.....		\$200, 810 87

J. M. BUCKLIN, *Engineer.*

Report Jan. 1, 1833.

AN ACT TO ABOLISH THE OFFICE OF CANAL COMMISSIONERS.

SECTION 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly:* The office of canal commissioners, created by an act entitled, "An act to provide for construction the Illinois and Michigan Canal," approved January 22, 1829, and further by an act entitled, "An act to amend an act to provide for the construction of the Illinois and Michigan Canal," approved February 15, 1831, be and the same is hereby abolished.

§ 2. The board of canal commissioners shall, as soon as may be, pay over and deliver to the treasurer of this State, all moneys in their possession, belonging to, or connected with said canal fund; and shall in like manner, deliver to the auditor of public accounts, the books, papers and vouchers, belonging to or connected with said board of canal commissioners, to be filed and preserved in his office.

§ 3. And the treasurer of said board shall in like manner deliver and pay over to the treasurer of this State all moneys in his hands belonging to the canal fund; and shall also deliver over to the auditor of public accounts, all books, papers and vouchers, having relation to the canal grant fund, and the acts and doings of the said canal commissioners, in his hands, either as treasurer or secretary of the said board of commissioners, to be preserved as above.

§ 4. The auditor of public accounts, attorney general and treasurer of this State shall, immediately after filing said papers, etc., proceed to examine and adjust the same; and if upon examination they shall find that any of the officers aforesaid have not faithfully and fairly accounted for, and paid over, all moneys which have come to their hands by virtue of their said offices, or have paid out any moneys not authorized by law; that said auditor and treasurer shall cause suit to be commenced upon the official bond of any such officer as aforesaid, as soon as practicable, and prosecute the same with reasonable diligence to final judgment and execution; and all moneys received from any of said officers shall be deposited in the treasury of this State. The circuit court of Fayette county shall have and take jurisdiction of such suit, and for that purpose shall direct all necessary process to any county in the State.

§ 5. It shall be the duty of the auditor, attorney general and treasurer, to make and report a detailed statement of their proceedings herein to the next General Assembly of this State. This act to take effect and be in force from and after its passage.

Approved March 1, 1833.

The General Assembly of the State of Illinois in session] December 20th, 1832, adopted the following memorial:

To the Honorable, the Senate and House of Representatives of the United States in Congress assembled:

The memorial of the General Assembly of the State of Illinois, respectfully represents, that by "An act entitled an act to grant a quantity of land to the State of Illinois for the purpose of aiding in opening a canal to connect the waters of the Illinois river with those of Lake Michigan, approved March 2d, 1827," Congress has granted to this State a quantity of land, on the line of the proposed canal, to assist in the accomplishment of the work. Since the passage of this law, the State has caused the route to be surveyed, and the cost of the work to be estimated, from which it appears, that the expense will greatly exceed the amount originally contemplated; that a railroad or turnpike will be, upon the whole, more useful and less expensive, and can be accomplished in much less time. Nevertheless, the act of Congress limits the donation to the purpose of making a canal so as to restrict the Legislature from making any other application of it. Your memorialists therefore pray your honorable body, to pass an act enabling this State to apply this donation to a turnpike, railroad or canal, as either of them shall be found to be most advantageous or convenient.

The Congress of the United States passed an act in response to this memorial, entitled, an act to amend an act entitled, "An act to grant a quantity of land to the State of Illinois, for the purpose of aiding in opening a canal to connect the waters of Illinois river with those of Lake Michigan," and to allow further time to the State of Ohio for commencing the Miami canal from Dayton to Lake Erie. Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled. That the lands granted to the State of Illinois by the act to which this is an amendment, may be used and disposed of by said State for the purpose of making a railroad instead of a canal, as in said act contemplated; and that the time for commencing and completing said canal and railroad, whichever the State of Illinois may choose to make, be and is extended five years; *Provided*, That if a railroad is made in place of a canal, the State of Illinois shall be subject to the same duties and obligations, and the government of the United States shall be entitled to, and have the same privileges on said railroad, which they would have had through the canal, if it had been opened.

Sec. 2. And be it further enacted: That the further time of five years be allowed the State of Ohio to commence the Miami canal from Dayton to Lake Erie, in addition to the time now allowed therefor by law.

Approved March 2, 1833.

In January, 1835, the General Assembly of Illinois passed an act entitled "An act for the construction of the Illinois and Michigan canal." Under this act Governor Joseph Duncan nominated Edward Coles, president; Gurdon S. Aubbard, Joel Manning, William Linn, and William B. Archer, commissioners, who were duly confirmed as the Board of Canal Commissioners. This act, however, proved defective in so many particulars that nothing was accomplished by this commission.

From 1831 to 1835 a strong effort was made to secure the construction of a railroad instead of a canal. This effort, however, while it was advocated by many of the leading men of the State, met with little encouragement from the people.

The Congressional acts of 1827 and 1833 extended the time limit for commencing the canal to 1837 and for its completion to 1852, it being apparent at this time that prompt measures must be taken for the commencement of the canal or the rights under the act of 1822 and 1827 be lost and the land grant of 1827 thereby revert to the general government; that the Governor of Illinois by proclamation convened the General Assembly in special session December 7, 1835. In his message Governor Duncan used the following language:

"There are two other subjects of deep interest, requiring your immediate action, which rendered it necessary in my judgment, to convene the General Assembly at this time, the first of these in importance is the canal. It will be seen by the correspondence with Governor Coles, president of the board of canal commissioners, herewith communicated, that the effort to obtain a loan under the act of the last session entirely failed. I therefore trust that this subject will receive such consideration as its great importance demands. The sale of the alternate sections by the United States in the canal reservation at Chicago in June last furnishes the clearest evidence that the land in that reservation and the town lots in Chicago owned by the State, may be safely estimated at from one to three millions of dollars, and as the work progresses their value will increase, and it is now the opinion of well informed persons, that with judicious management a sum may ultimately be realized from them, sufficient to cover the whole expense of the contemplated canal; if, however, it should be found otherwise, I feel the most perfect confidence that the general government will extend its appropriations either in granting other donations of lands or monies to enable us to complete this great work, which combines the interest of so many States, that it is universally admitted under every aspect of the subject to be an object of the first national importance. The time has arrived when any further postponement of this subject will in my opinion amount to a violation of a sacred public trust committed to our care, and which the interest of the State and nation

admonish us to preserve inviolate. I therefore earnestly hope we shall all unite in the adoption of some efficient measures for the speedy accomplishment of this object. Regarding this great work as one that affects deeply the national interest, and consequently justly entitled to that fostering care and support of the United States government, which it has hitherto, and if required, must continue to receive, I would suggest the expediency of making it the duty of those persons who may be charged with its construction, to make reports of their progress to the National as well as the State government, so that each may be informed of the expense, progress and character of the work.

As to the size and description of the proposed canal, my views were fully expressed in my message to you a year ago, those views have undergone no change, on the contrary, the importance of making this an ample channel for the passage of steamboats, has been fully developed by the fact that the commerce of the Erie canal has quadrupled every five years since it was completed, and that that canal is found insufficient to accommodate its commerce. In consequence of which, the State of New York, is about widening its channel, which will be attended with very great expense, as all the locks will have to be rebuilt. In addition to this improvement two other channels of communication from Lake Erie to the Ocean, are about to be constructed, one is the railroad from the lake to the North river, on the southern border of New York; the other is a ship channel around the falls of Niagara, which will take a portion of the trade of this country by the lower Lakes and the St. Lawrence. Should the commerce of the Lakes continue to increase, of which there can be no doubt, all must see the importance of constructing this work on the most liberal scale.

When we look abroad and see the extensive lines of internal communication penetrating almost every section of our sister states—when we see the canal boat and the locomotive bearing, with seeming triumph, the rich productions of the interior to the rivers, lakes and the ocean, almost annihilating time, burthen and space, what patriotic bosom does not beat high with a laudable ambition to give to Illinois her full share of those advantages which are adorning and enriching her sister states, and which a munificent providence seems to invite by the wonderful adaptation of our whole country to such improvements.

Very respectfully,

JOSEPH DUNCAN.

December 7, 1835.

Immediately thereafter the General Assembly passed the following, entitled an act for the construction of the Illinois and Michigan canal:

SECTION 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly:* That the Governor of this State be, and he is hereby authorized and empowered to negotiate a loan on the credit and faith of this State, as hereinafter provided, for the purpose of aiding, in connection with such other means as may be hereafter received from the government of the United States, in the construction of the Illinois and Michigan canal, a sum not exceeding five hundred thousand dollars, which shall be required to be paid at such times and by installments, as the same may be needed in the progress of said work, as near as the same can be estimated.

Sec. 2. The Governor shall cause to be constituted certificates of stock for the said loan, to be called the "Illinois and Michigan Canal Stock" signed by the auditor and countersigned by the treasurer, bearing an interest not exceeding six per cent. per annum, payable semi-annually, at the bank of the State of Illinois or any of its branches, or at some bank in the cities of New York, Philadelphia, Boston, or either, as may be agreed upon, and re-imbursable at the pleasure of the State, at any time after the year, one thousand, eight hundred and sixty, and the faith of the State, is hereby irrevocably pledged for the payment of the stock hereby created, and the interest accruing thereon.

§ 7. The Governor of this State, by and with the advice of the Senate, shall appoint three practical and skilful citizens of this State, to constitute a board to be known by the style and description of "The Board of Commissioners of the Illinois and Michigan Canal," and he shall designate one of said commissioners to be president thereof, one to be treasurer, and one to be acting commissioner; whenever any vacancy shall occur in the said board of commissioners by death, resignation, or from any other cause, the Governor of this State shall fill such vacancy during the recess of the Legislature, and the Governor shall have power to remove from office any canal commissioner, for good cause, which he shall make known in a communication to the next ensuing General Assembly.

§ 8. The board of commissioners to be appointed as aforesaid, shall hold their office until the first Monday in January, 1837, and thereafter the said board of commissioners shall be bi-ennially appointed in such manner as the Legislature may from time to time direct.

§ 16. The said canal shall not be less than forty-five feet wide at the surface, thirty feet at the base, and of sufficient depth to insure a navigation of at least four feet, to be suitable for ordinary canal boat navigation, to be supplied with water from Lake Michigan and such other sources as the canal commissioners may think proper, and to be constructed in the manner best calculated to promote the permanent interest of the country; reserving ninety feet on each side of the canal to enlarge its capacity, whenever in the opinion of the board of canal commissioners, the public good shall require it: *Provided*, that all persons who have purchased, or shall hereafter purchase lands fronting the said canal shall be permitted to lease from the said board the said reserved ground on each side of said canal, from year to year, or until the said ground shall be wanted to enlarge the capacity of said canal, for the best price that can be obtained, to be paid into the canal fund.

§ 17. They shall take efficient and proper measures for the immediate construction of the said canal; shall put such parts of it as they may deem proper under contract as herein provided, and shall have the general care and superintendence thereof.

§ 21. It shall be lawful for them to enter and use any lands, water, streams and materials of any description necessary for the prosecution of the works contemplated by this act.

§ 32. The commissioners shall examine the whole route, and select such places thereon as may be eligible for town sites, and cause the same to be laid off into town lots, and they shall cause the canal lands in or near Chicago, suitable therefor, to be laid off into town lots.

§ 33. And the said board of canal commissioners shall on the twentieth day of June, next, proceed to sell the lots in the town of Chicago and such parts of the lots in the town of Ottawa, as also fractional section fifteen, adjoining the town of Chicago, it being first laid off and subdivided into town lots, streets and alleys, as in their best judgment will best promote the interest of the said canal fund: *Provided, always*, that before any of the aforesaid town lots shall be offered for sale, public notice of such sale shall have been given in such newspapers, not less than five in number, including the one printed in Vandalia, either in this or in other states as the board may think best, at least eight weeks prior to any sale: *Provided, further*, that if no sale be made on the day herein named, such sale may be made at any time thereafter upon giving the notice and upon the terms herein required.

§ 34. It shall be the duty of the canal commissioners, before the day appointed for any sale of lots, to make a list of the lots intended to be offered describing them by their numbers and value, each lot separately, and certify the same under their hands and seals, which list and certificate shall be filed with the treasurer and preserved, and no lot shall be sold for less than the valuation, and all lots remaining unsold, shall be again advertised for sale in the manner aforesaid and said commissioners shall continue from time to time to advertise all lots remaining unsold, at any public sale, until the whole shall be sold, and no lots shall be sold except at a public sale to the highest bidder: *Provided*, that all persons who may have made improvements upon any of the lots authorized to be sold, shall be permitted to remove such im-

provements at any time before the day fixed for the sale of any such improved lots, being responsible for all unnecessary damage done or suffered by said removal.

§ 45. The act entitled, "An act for the construction of the Illinois and Michigan canal, approved February 10, 1835," is hereby repealed, and the canal commissioners heretofore appointed under any law of this State be and the same is hereby declared to be out of office from and after the passage of this act, any law to the contrary notwithstanding.

Approved January 9, 1836.

Under this act Governor Joseph Duncan appointed General William F. Thornton, Colonel Gurdon S. Hubbard and William B. Archer as the board of canal commissioners. This board met at Vandalia January 15, 1836, and organized by selecting W. F. Thornton, president, Gurdon S. Hubbard, treasurer, and William B. Archer, acting commissioner, and appointed Joel Manning as secretary of the board, and ordered that the general office be established at Chicago, Illinois.

April 6, 1836, the board selected and appointed William Gooding chief or principal engineer, Edwin B. Talcot and Edward Smith as senior assistant engineers. The board also ordered an immediate examination of the Calamie river for a feeder and directed that said feeder should be forty feet at the surface of the water, twenty-six feet at the bottom, and four feet deep. April 19, 1836, the board passed the following order:

Ordered by the board that public notice be given that from the 25th day of May to the 6th day of June next sealed proposals be received at the office of the Illinois and Michigan canal for the construction of the said miles of the Summit division of the said canal extending from the Chicago river to the Des Plaines, and also six or seven miles of the same division extending from the Sagawashee swamp down the valley of the Des Plaines river.

THURSDAY, May 19, A. D. 1836.

The board met pursuant to adjournment, present as at the former meeting.

Ordered by the board that the following be the dimensions of the Illinois and Michigan canal through the Summit or first division, to-wit: Not less than thirty-six feet on the bottom, sixty feet on the top water line, and six feet deep, except where from the peculiar difficulties of particular situations it shall be deemed expedient by the acting commissioner or chief engineer to diminish the size, when it shall be subject to further order.

Ordered that the board adjourn to the 6th day of June next.

W. B. ARCHER,
G. F. HUBBARD.

June 7, 1836, the board of commissioners met, examined bids, and awarded the following sections on the Summit level: Sections 1 to 4 inclusive and sections 49 to 66 inclusive, and on October 21 following they awarded sections 173, 179, 183, 188, 189, 190, 1, 2, 3, 5, 6, 7, being at the southwest end of the Western division thus commencing work at each end of the proposed canal.

Vouchers Nos. 1 to 10 for September, 1836 on file in this office, show that measurements were taken and an award made for work performed on sections 49 to 53, sections 50 to 58 and 64 and 65, all inclusive, to the amount of \$3,820.82, Summit division, and for October, 1836, an amount awarded of \$8,102.42, for November, 1836, \$10,633.27, and for December, 1836, an amount of \$7,826.60. All of which was paid as shown by the receipted vouchers on file in this office.

The following letter from citizens of Ottawa and reply thereto by W. F. Thornton, president of the board of commissioners, contains much of interest and corroborative of matter in these pages.

CHICAGO, June 23, 1836.

To the Honorable, the Canal Commissioners of the State of Illinois.

GENTLEMEN:—At a meeting of the citizens of the town of Ottawa the undersigned were appointed a committee to address a note to your board to ascertain whether it is contemplated by you to cause a survey of the Illinois river or any part of it to be made, in order that estimates may be made with a view to its ultimate improvement for slack water navigation.

We are, gentlemen,

Respectfully yours, etc.,

BENJ. H. MOONEY,
JAMES DAY,
LORING DELANO,
BENJ. HARRIS,
BARTLEY DENISON,
WM. E. THORNTON,
DAVID LETTS,
HENRY GREER.

PRESIDENT TO CITIZENS OF OTTAWA.

CANAL OFFICE, CHICAGO, July 11, 1836.

Committee of the Citizens of Ottawa.

GENTLEMEN:—Your communication of the 23d ult., was laid before the board of canal commissioners at their first full session, after the receipt of it, and I hasten to apprise you of the result. You inquire "whether it is contemplated by the board to cause a survey of the Illinois river, or any part of it, to be made with a view of its ultimate improvement for slack water navigation," and we presume that you allude more especially to that part of the river lying between Ottawa and the western boundary of the canal lands.

By reference to the 44th section of the act for the construction of the Illinois and Michigan canal, approved the 9th of January, 1836, it will be seen that the Legislature have ordered the canal to terminate "at or near the mouth of the Little Vermillion river, in LaSalle county, and on lands owned by the State."

When this act was passed, the question was not new, whether a continuation of the canal, or an improvement of the river below Ottawa by lock and dam was most advantageous to the general interest. The Legislature had accumulated a large fund of information in order to judge of the comparative advantages and disadvantages of each plan, both in relation to the safety and stability of navigation, and to the increased revenue derivable from State property by terminating the canal as low down the river as was contemplated in the grant of lands from the Government of the United States. Nor can it be doubted that the tenor of that grant had some influence on the decision. The information relied upon may be found in Post and Paul report of 1825; in Bucklin's report of 1833, in sundry legislative reports; and in the history of the subject from its inception to the passage of the present law. Post and Paul were the first engineers employed on the route. They made their estimates for "a canal to terminate near the mouth of Little Vermilion river" subsequent to their report and prior to any other the general government made the munificent donation which has put the immediate execution of the work beyond a shadow of doubt; and it can not escape observation that the western limit of the grant was predicated upon the termination recommended by those engineers, and soon afterwards, adopted by the Legislature. In 1831 the board of commissioners was organized and Mr. Bucklin employed. During that and the following year he surveyed the entire route; and late examinations show that he executed his task with great care and ability. Besides surveying the lines and locating a canal and railroad, he made a scientific examination of "the rapids of Illinois river below the mouth of Fox River." This duty was executed in 1832, under the eighth

section of "an act to amend an act to provide for the construction of the Illinois and Michigan Canal," approved the 15th day of February, 1831. "The commissioners shall have power," says the law, "to cause an engineer to examine the Illinois river, from the mouth of Fox river, down to the head of steamboat navigation; and if, in their opinion the navigation of the Illinois can be improved by locks and dams, or otherwise, so as to secure its navigation as far upward as the mouth of Fox river, with as little expense and as much utility as cannalling from the Fox river to the Little Vermilion or the foot of the rapids, they shall have power to terminate said canal at mouth of Fox river." In 1833, the same engineer reported that a comparatively good route could be obtained for the continuation of the canal from the mouth of Fox river to a place now known as Utica and that great difficulty and expense would attend a further progress. In examining the rapids of the Illinois below the mouth of Fox river he says, "It was ascertained that the establishment of a still water navigation was the most certain and effectual method of improving them." But in his zeal to demonstrate the superiority of a railroad over either mode of water communication, he admitted a steamboat canal around the rapids, "to be of too precarious a nature to be recommended with any degree of confidence in its permanency and usefulness." He estimated an independent canal between Fox river and Utica at \$580,000; and a still water navigation for the same distance at \$200,000; and it is worthy of remark that notwithstanding this great disparity of cost necessarily enhanced by the difficult country between Utica and the mouth of the Little Vermilion, the Legislature have thought proper to repeal the eighth section, just cited, and to adhere to the first plan. In fact they have presented the termini in language not to be misunderstood, while they have given great latitude and almost everything else connected with the subject, hence the commissioners deem themselves unauthorized at this time to cause a survey of the rapids of the Illinois river "with a view of their ultimate improvement for slack water navigation;" nor would they be justified to any premeditated suspension of that particular line for the sole purpose of bringing the matter again before the Legislature, unless the engineers (who have recently ascertained that a safe canal and suitable termination are entirely practicable) should prove by their estimates that the cost will so far exceed any previous calculations as to render it prudent, on the part of the commissioners, to report that fact to the Governor and pause for additional legislation.

It will be readily perceived by the citizens of Ottawa, that the law, which created the present Board of Commissioners, enjoins it upon them to prosecute the work with vigor. Ample funds for extensive operation are awaiting application. The people of Illinois would be justly indignant at any course calculated to retard or embarrass the progress of a stupendous structure which they know will not only insure them prosperity but elevate the State to the high rank awarded her by nature. It is due to the people too that the benefits to arise from the expenditure of so vast a sum of money as will be required to complete the work, should be as early and as generally diffused as possible. Contracts have been made to a considerable amount of the Summit division, and owing to the doubtful character of the rock excavation, high prices have been exacted. Very few more can be let to advantage, in that quarter, until the prosecution of those under way shall have made development, upon which both contracting parties can act with more certainty. The lower extremity of the line must, therefore, be taken in hand, if contractors can be had at fair prices. And to ascertain that fact, proposals will be invited whenever the estimates are in sufficient state of forwardness to warrant a final decision. Provisions, it is believed, and probably labor will be cheaper at that end than at this. A market will ensue which will naturally send its surplus further up the country and contribute to reduce the prices of substances on the rest of the line. Many persons would take contracts on the line below, who will not go above and the causes which influence contractors will operate on laborers. But independent of these considerations, the speedy completion of the division from the foot to the head of the rapids will materially strengthen the canal fund, shorten the temporary portage between

the lake and the navigable part of the Illinois river, bring hydraulic power into earlier use and facilitate in a variety of ways the means of carrying on the upper division.

Taking this view of the subject, the commissioners can make no pledge "to cause any part of the river to be surveyed, with a view of slack water navigation," except in the contingency before mentioned or, in the further one, of the Fox river feeder, and the division along the Rapids not being got under contract during the present season. Should either of those events take place, an accurate survey from Ottawa down will be made this fall when the water is low, and plans and estimates submitted to the Legislature.

In coming to this conclusion, the board of commissioners are influenced, in the first case, by the consideration that if a continuous canal should be shown to be too costly for its benefits, a still water navigation will be the only alternative; and in the second case, by their anxiety to do everything consistent with their duty, to promote the interest and gratify the wishes of the enterprising citizens of so important a town as Ottawa. A point in which the State is deeply concerned and one which, in no event, can fail to arrive at immense consequence.

The constant press of business, arising from the letting of contracts and the sale of the Chicago lots, is tendered as an apology for not communicating with you sooner. We trust, however, that the delay has produced no serious inconvenience.

With great respect, gentlemen, I remain,

Your obt. servt,

W. F. THORNTON,

President Board Comms. I. and M. Canal.

Messrs. BENJ. H. MOORE,
JAMES DAY,
LORING DELANO,
BENJ. HARRIS,
BARTLEY DENISON,
WM. E. ARMSTRONG,
GEO. H. NORRIS,
DAVID LITH,
HENRY GREEN.

The 10th General Assembly of Illinois began December 5, 1836. The Governor's message was voluminous and being principally devoted to the political issues of the day. He, however, referred to the canal as follows:

"Contracts have been made for the construction of several sections of the Illinois and Michigan canal, by which it appears that the expense of completing that work is likely to exceed very far the highest estimate ever made by any of the engineers who surveyed it. The increased price of labor and supplies account in some measure for the great difference in the estimates and the contracts. The work is of the highest importance both to this State and the United States, and no ordinary difficulty or expense should, for a moment, deter us from its vigorous prosecution. The means arising from the canal lands and lots will be very large, and it is hoped will be nearly sufficient to meet the whole cost of the work. Should it turn out otherwise, additional funds will doubtless be furnished by the general government, as the national character of the work is fully established and acknowledged by several acts of Congress, the conditions of the cession of the northwestern territory by Virginia, and the universal judgment of the country; and as the work has been commenced under the auspices of the general government, it will doubtless in this, as in all other cases, furnish means to carry it through."

On the 19th of December following, the General Assembly called upon the Governor for information relating to the operations on the canal, and received the following reply:

To the Honorable, the Speaker of the Senate.

SIR:—In compliance with a resolution of the Senate of the 19th ult., calling on this department for all the information in relation to the operations on the

canal by the board of commissioners, I avail myself of the earliest opportunity after receiving the information called for, to transmit to you the annual report of the canal commissioners, accompanied by various documents from said board, comprising a very full and satisfactory statement of all their operations since they entered on the discharge of their duties.

It will be perceived from them that all the interests of that great and important work have been faithfully and diligently attended, and that the work has been commenced under a system and on a plan which not only secures success, but possesses the greatest benefits to our country when the work shall have been completed. The many and important suggestions contained in their able and voluminous report in relation to the future operations on the canal will, doubtless, receive your mature and due consideration. I would also beg leave to call your attention to the fact, that the present board of canal commissioners are constituted a body politic and corporate, and that their offices expire on this day, and as it has been suggested that the contracts made by the board may be affected by the body ceasing to exist as a corporation, I would respectfully submit for your consideration, whether it would not be proper to pass an act conferring upon said commissioners or extending their corporate powers until provision is made by law for the appointment of new ones.

The information given in the report in relation to destruction of timber on the canal lands is of such pressing importance that I would beg leave to call your attention to the necessity, at the earliest possible period, of passing a law containing sufficient penal provisions, which will preserve the timber from future lawless destruction. It is the opinion of the commissioners and others, that the loss of the State exceeds \$15,000.00 per month, by trespasses committed on canal timber; and that short of agents clothed with ample and sufficient power along the whole line of the canal can not prevent the general plunder and destruction of timber on those lands.

I have the honor to be sir,

JOSEPH DUNCAN.

In obedience to the act for the construction of the Illinois and Michigan canal, the Board of Commissioners respectfully submit their

ANNUAL REPORT.

The forty-second and forty-third sections of the law under which the commissioners were appointed, make it their duty to transmit, annually, to the Governor a minute and particular report, setting forth in a plain and intelligible manner all their acts and doings in relation to the canal, and the canal lands and lots; all money received and expended, the work done and the prices allowed for it; the contracts made, with whom made and the security given by contractors; the number of engineers, draftsmen, clerks and agents of every description in the employment of the commissioners and the amount of compensation paid to each; the contemplated plans of the board for future operation; the probable amount of money that will be required for canal purposes the ensuing year; the amount, time and rate of any loans authorized by law; and such other matters and things as they may see fit to add.

The topics thus especially prescribed will as far as practicable, be disposed of in the order in which they are enumerated.

Immediately after the appointment of the commissioners they were legally qualified and proceeded to business.

The board was organized at Vandalia on the 15th day of January and at their first meeting appointed Mr. Joel Manning of Jackson county their secretary. At a subsequent meeting Mr. Edward Smith of Wabash county and Mr. E. B. Talcott of Chicago were appointed assistant engineers; Mr. Samuel Hackleton of Fulton, commissioner and general agent; and the acting commissioner was authorized to engage the services of William Gooding, Esq., as chief engineer, which was soon afterwards done.

At the same period of time your Excellency communicated to the board a correspondence (accompanying document A) between yourself and the president of the State Bank of Illinois, which resulted in a four month loan of ten thousand dollars, bearing an interest of six per cent per annum. By this arrangement the commissioners were enabled to commence their preparations much earlier than they otherwise could have done; and the amount was found amply sufficient to meet all necessary expenses prior to the June sale of the Chicago lots, when the bank was reimbursed in principal and interest.

On the 16th day of January the board closed their session at Vandalia, and on the 27th day of March they assembled at Chicago, where all the officers who had been appointed were found ready for duty. In the meantime the treasurer, under authority of the board, had made several explanations and had caused a temporary office to be erected and furnished on one of the canal lots in the town of Chicago, and the acting commissioner had procured instruments and outfits for the engineering department. The first attention of the board was directed to that section of the work next to Lake Michigan. Its difficult magnitude and greater length of time required for its construction demanded the preference. Early in the month of March an engineering party under the direction of Mr. Talcott was put in motion commencing their operations on the summit level, availing themselves of the frozen state of the country to make examinations which later in the season would have been more difficult and less satisfactory. For the details of those examinations and of all others, the commissioners refer your Excellency to the clear and satisfactory report of the chief engineer (accompanying document B). It expresses the opinion and views of the board as well as of the engineer, hence a bare reference to it will save repetition whenever additional illustration should be deemed unnecessary.

In the very threshold of their administration, the board were met by appalling difficulties, involving the highest official responsibility, and the most vital interests of the State. They soon became convinced that the magnitude of the undertaking had been miscomprehended both by the Legislature and the people. The largest estimate that had been previously made was about four millions of dollars; and without regarding the enlargement of the plan, or the increased value of the means of execution, it was confidently asserted by many members of the Legislature and other citizens, whose opinions were entitled to weight, that even that estimate was far beyond the truth.

The commissioners had but just begun their inquiries when they became satisfied that the four millions would be wholly inadequate; and before they had determined on any definite location, they saw that if the spirit of the law was adhered to, double that sum would be required. The seventeenth section of the act says that "*the canal shall be supplied with water from Lake Michigan, and such other sources as the commissioners may think proper.*" In other words, Lake Michigan must be a feeder; and consequently the water of the lake must be carried into the valley of the Des Plaines by a through cut, chiefly in stone, of eighteen feet deep, on an average and nearly thirty miles long. It was upon this plan that Mr. Bucklin made his four million estimate; but his canal was to be forty feet wide at the surface, twenty-eight feet base, and four feet deep; while the present law requires "*not less than forty-five feet water surface, thirty feet base, and a sufficient depth to insure a navigation of four feet.*" It is to be constructed, too, in the manner best calculated to promote the permanent interest of the country, and a discretionary reservation is authorized on each margin with a view to future enlargement.

To the difficulty which this view of the subject presented, another was added which exercised a strong influence on the movements of the board. It was at first believed by men of experience, and countenanced by the engineer, that steam power would have been freely resorted to in order to divest the Summit level works from the water which might probably flow in through the fissures of the rocks; and that the necessity of such a resort would not only increase the expense of excavations, but deter contractors from making acceptable proposals. Under the circumstances, the board came to the conclusion that if it were practicable to obtain ample feeders

from other sources than the lake, they would direct their operations for the present year to some other division of the work and call the attention of the Legislature to a change of plan. The Calumet and the Des Plaines having been ascertained to be insufficient, the upper region of the Fox river, as the only remaining chance, was ordered to be examined; but after a brief, yet convincing investigation, the project was abandoned. A reference to the engineer's report will afford all the particulars of the exploration.

Nothing now remained but to go through the Summit level, or suspend the whole work. To suspend the work, even for a season, and thereby create alarm, would, in the opinion of the commissioners, have been destructive of some of the brightest prospects of the State, and ruinous to thousands of its citizens. It was resolved, therefore, to execute the plan pointed out in the law. With that view, further more accurate surveys were made, which, if they give us hope of a reduction of cost, confirmed the practicability of the flow, and lessened the apprehension of annoyance by the influx of water.

The next question to be decided was the size of the canal. After mature deliberation, the board determined to adopt the recommendation of the chief engineer, and construct it of the following dimensions, to-wit: Sixty feet wide at the top water line, thirty-six feet wide at bottom and six feet deep. The fluctuation, or irregular tides, in the lake, occasioned by the action of high winds rendered the depth agreed upon indispensably necessary to insure a navigation of at least four feet, and the commissioners were decidedly and unanimously of the opinion that the adopted width was that "best calculated to promote the permanent interest of the country." There can be no manner of doubt that a canal of less capacity would have answered all the demands of commerce for a few years, but when it is considered that this is a short and important link in the greatest chain of internal navigation known to the world; that it unites the Mississippi with our inland seas—the Gulf of St. Lawrence with the Gulf of Mexico—and the Rocky mountains with the Atlantic coast; that it passes through the most fertile and rapidly growing regions in the western valley—a region abounding in grain, in meat, in mineral, in fuel, and in hydraulic power; and that it is soon to be connected with extensive internal improvements penetrating every part of our rich interior; when all these things are considered and like works are appealed to, it seems to the commissioners that few can be found so skeptical as to deny that in less than twenty years the present size will be none too large, if indeed it may be large enough. Let it once be conceded that in any reasonable lapse of time a forty-five foot canal would be required to be enlarged, then the experience of New York is demonstrative that it is better to begin with the greatest size that may be wanted than trust to enlargement, since the process of enlarging is tedious, expensive and far more costly than the original work. Her abler engineers and commissioners support this position. But there are other and more immediate considerations which justify the increased size and give it great importance to the State. There is no avoiding the stupendous cost through the Summit Level. Water must be drawn from Lake Michigan, and that water will be of great value, as well for the improvement of the river navigation as for hydraulic purposes. The greater size of the canal will facilitate the passage of canal boats, overcome their burden and cheapen freights. It must have, too, a beneficial effect upon the prices of lands and town lots owned by the State; such an effect, in fact, was clearly perceptible at the recent sales in Chicago, and will doubtless be felt at every other point.

The size and plan having been settled, the board proceeded to a definite location of such parts of the Summit Level as was thought prudent to place under immediate contract.

All previous examinations had proved that the route of the canal must enter the valley of the Des Plaines near a place designated in former surveys as the "Point of Oaks," about eleven and a half miles from the town of Chicago, this being the greatest depression in the ridge dividing the lake waters from those of the Illinois valley. From the Point of Oaks to the Chicago river the country was examined with great care, and various lines were levelled and estimated. It was finally determined that the proper place of

beginning was on the north fork of the south branch of the river, about four miles to the southwest of Chicago, corresponding very nearly with the location made by Mr. Bucklin. A straight line was obtained from the place of beginning to the Point of Oaks, a distance of $7\frac{1}{2}$ miles, thence down the valley of the DesPlaines, to the running out of the lake level the course was nearly direct, and no difficulty was experienced in making a satisfactory location. The level terminates advantageously for the use of hydraulic power, and secures all possible advantages to the property of the State, as is fully explained in the report of the chief engineer. The same document contains every thing else that need be said relative to the location of the entire line from its beginning at Chicago to its terminal near the mouth of the Little Vermillion river.

On the 19th day of April proposals were invited for the execution of two portions of the Summit division; the first being seven and a half miles of earth excavation, divided into half mile sections, and extending from Chicago river to the Point of Oaks; the other, principally in rocks, consists of twenty-four sections of thirty chains each, commencing at the north of the Saganskee swamp, and extending nearly to the termination of the Summit division, or lake level. On the 6th of June the proposals were opened, and contracts for eighteen sections were awarded, some of which were subsequently abandoned, others changed, and a few of those abandoned were afterwards re-let. The engineer's report will show the progress, cost, and present condition of each remaining under contract. All the proposals, with the exception perhaps of two or three, were above the estimates of the engineers; while many of them were too extravagant to be regarded as serious propositions. The commissioners were therefore compelled to reduce the letting on the Summit divisions to a man experienced until the character of the work should be better understood by the contractors, and all imaginary difficulties be removed by practical operations. That this will soon be the case they have no doubt.

Before the season was far advanced it became manifest that some other part of the line must be placed under contract or very little progress would be made in the present or the ensuing year. The western division, extending from the Grand Rapids of the Illinois, to the Little Vermillion river presented the strongest claims to early attention. Surveys and estimates of the whole division were not completed until late in July. They exhibited an expensive but safe work, and one which the commissioners felt no hesitancy in deciding to execute as early as a due regard to economy would permit. About the first of August the work was advertised for contract, and on the 20th day of October proposals were accepted at a small advance upon the estimates for twelve sections, including the steamboat basin. A few of these sections were subsequently abandoned, the others are in the hands of contractors believed to be efficient, some of whom are now prosecuting their work with confidence and spirit. All further information is minutely detailed in the engineer's report. It may be proper, however, to mention that, pending the surveys, a communication was received from the citizens of Ottawa, through the medium of a committee, requiring to be informed whether the board contemplated a survey of any part of the Illinois river with a view of its improvement by slack water navigation. An answer to this inquiry would evidently involve the views of commissioners in regard to the place and manner of terminating the canal, and as this was a subject of much anxiety to a large and respectable portion of the community, the answer was made as full and as explicit as circumstances would allow. A copy of the correspondence (Document C) is annexed for the purpose of showing more fully the reasons which influenced a prompt decision of the board.

Under the clause of the law, requiring good and sufficient security for the faithful performance of contracts, the board established a rule which has been regularly adhered to, that approved personal security should be given for five per centum on the aggregate amount of each contract. The same rule provides for the retention of fifteen per centum on the amount of work performed, and releases the personal security whenever the money retained,

from time to time, shall have equaled the amount of the penal bond. This was thought to be a sufficient guaranty and was in accordance with the usage of other states.

No condemnation of private property has yet been attempted. The existing laws on the subject are not calculated, the commissioners think, to induce justice; and as a short delay would be inconvenient to neither party, it was deemed best to suggest the propriety of a special provision by the Legislature.

On the 20th of June last the State lots in the town of Chicago, and those, which in accordance with the laws, had just been laid out on fractional section fifteen, adjoining the original town, was offered for sale, and during that and several days 415 lots were sold, being all for which the valuation could be obtained. Of these a number was forfeited and subsequently resold at the risk of the purchasers, who, in every case where loss was sustained, has been sued for the deficiency. Many of the lots brought a heavy advance on the valuation; and it may not be amiss to add that the liberal policy of the State Bank in granting facilities to purchasers had a sensible effect upon the sales. After deducting for forfeitures the number sold was 375, amounting in gross to \$1,355,755, one-fourth of which, together with a year's interest on the other three-fourths, was paid to the treasurer and by him deposited in the branch of the State Bank at Chicago. The sale at Ottawa took place on the 26th of September, when 78 lots were offered and all sold, amounting to \$21,358, and exceeding the valuation by more than \$2,000, and of this sum \$6,300.65, including the first payment and a year's interest on the others, were received by the treasurer and deposited in bank. A tabular statement (marked D), showing the valuation of lots sold and the total amount of sales, will be found among the accompanying documents.

At the close of the Chicago sales, many of the occupants of the State lots, refused to give possession to the purchasers; and on examination it was found that there was no remedy but by the tedious process of ordinary law. A summary power of delivering property when sold should certainly be vested in the commissioners; and this might surely be effected by an amendment similar to the provision contained in section thirty-five of the act of the last session.

When the lots were sold in Chicago, the entire block, number seven and a part of block number four were reserved from sale; the latter for the use of the canal officers, and the former for the future enlargement of the Chicago basin, if the Legislature should deem such a step advisable. By reference to the map it will be seen that block number seven lies immediately to the north of block number fourteen, which having been sold by former commissioners, is now private property. Should it ever become necessary to increase the capacity of the river as a basin and the commissioners feel confident that it will—block fourteen will stand in the way of the improvement, and block number seven, then becoming a front block, would be the means of reinstating the owners of fourteen, who in the event of no timely arrangement, might improve their property and either would wholly defeat the object, or render it very expensive. To this subject the commissioners respectfully invite your attention, confident that while no loss can accrue from the temporary reservation a great public benefit may possibly result.

Besides laying out fractional section fifteen, the commissioners have subdivided two ranges of valuable blocks west of the original town, being the remainder of the south half of section nine; and laid out the south part fractional section three, a part of sections seventeen, twenty-one, and twenty-nine, of the same township, into out-lots or blocks. They have also laid out two important towns. One at the first locks, on section twenty-three, in township thirty-six, north, and range ten east, called Lockport: the other at the termination of the canal, on section fifteen, township thirty-three, north, and range one east of the third principal meridian. Believing that at each of those points, flourishing towns or cities will unquestionably grow up. They have caused the locks, basins, streets and reservations to correspond with the importance of the positions. Two locks, each of ten feet lift, are located together at Lockport affording twenty feet fall of a volume of water, drawn from the lake, sufficient of itself to build up a large manufacturing

town, without a lock or other impediment separating it from Chicago. At the termination the town is still more advantageously situated. It is connected with the Illinois river by a short steamboat canal 120 feet wide and six feet deep which terminates in a capacious central basin; and that by a lock of twelve and a half feet lift; is united with a smaller basin appropriated to canal boats. Certified charts of the different towns and additions, and all necessary drawings will accompany this report. It is a matter of great doubt whether the board are in possession of the original surveys of the towns of Ottawa and Chicago, made under the authority of former commissioners. The maps by which they were governed in the late sales, and which were the best authority they could find, are not accompanied with the requisite certificates; nor have they been legally recorded. No trace can be found of any permanent pillars, or other marks, by which to ascertain the precise location of corners: even the wooden stakes originally used, have mostly disappeared. The consequence is that the inconvenience of uncertainty is growing with time and value of property, and if not soon checked will be a fruitful source of litigation. The commissioners would therefore recommend a resurvey in connection with the town authorities; the planting of durable monuments; and the recording of accurate maps. At Ottawa an additional inconvenience is felt. It will be observed by referring to the map, that the State lots lying in the fork of the Illinois and Fox rivers was not laid out parallel with the opposite part of the town, or with the section lines, but varying at an angle of twelve or fifteen degrees. Additions have since been made by individuals conforming to the first plan and rendering it still more desirable that the property of the State should be remodeled. Very few of the lots have been disposed of, and the owners of those are said to acquiesce in the proposed change. In laying out towns and additions, the laws of the State require the services and certificates of county surveyors. This often produces unnecessary delay and expense. It can be better done by the assistant engineers; and if the Legislature approve the suggestion, they can at the same time authenticate the plats which accompany this report.

Notwithstanding the quantity sold, there is still a large amount of public property in Ottawa and its neighborhood, the value of which, as well as the general interest of the surrounding country, would be greatly promoted by a lateral canal, leaving the main stem near the Fox river aqueduct, and passing through the town to either river, not far from their junction. The expense of the work would be chiefly if not wholly defrayed by the increased value of the property of the State.

Much difficulty has been occasioned on other public works, and it is anticipated on this, by the riotous conduct of some of the laborers, attributable in most cases, to the use of ardent spirits. In order to prevent such scenes as possible, it was thought at least worthy for an experiment, to prohibit contractors from selling, giving, or in any manner allowing the introduction of spirits on the line. But the beneficial effect of the regulation has, in a great measure, been counteracted by the multiplicity of tippling houses, erected along the route, under the sanction of brewers from the county commissioners' courts. Special legislation must be resorted to, or the position assumed by the commissioners will be unavailable.

The books and accounts of the treasurer, and those of the secretary, acting as a disburser of the contingent fund, have been diligently examined and were found, on the fifth instant, to correspond with the vouchers filed in their respective offices, and also with the account current of the bank. A report from the treasurer (Document E) another from the secretary (Document F), and the certificate account current of the bank (Document G) will afford all the financial information that the law requires to be reported. The accounts of the treasurer show that he has received during the year the sum of \$406,247.99 of which \$99,449.75 have been expended, leaving in bank, to the credit of the canal fund, a balance of \$306,798.24. The money expended is distributed under appropriate heads in the report of the secretary, a recurrence to which will show that the amount of money paid to contractors is \$33,898.75, and for contingent expenses \$. The disparity between these two branches of expenditure is principally owing to the fact that the present year has been devoted, in great part, to surveys, sales, preparation and outfits.

But the heaviest item in the contingent account is the Saganashkee road, amounting to \$..... At the very commencement of operations it became evident to the board, that, owing to the total absence of a road along the route of the canal, which passes, for several miles, through marshy, wet prairie, and heavy timber, some step must be taken to secure free access to the line, at all seasons of the year. Without it, hardships would at times, be much retarded, and contractors would naturally seek to indemnify themselves by increased prices. At the instance of the acting commissioner, he was therefore authorized to make such improvements as, in his opinion, were indispensably necessary. It was believed at that time, that five or six thousand dollars would accomplish the object; but the plan was afterwards extended to its present condition and cost upon the individual responsibility of the acting commissioner. He was confident that a proper discharge of his duty, as the immediate superintendent of the canal, warranted the expenditures; and the other members were unwilling to withhold the means which the nineteenth section of the law would seem to sanction. The board is unanimous, however, in opinion, that the State will eventually be more than reimbursed by the advantages derivable from so useful a highway.

The contracts made, and with whom made; the work done, and the prices paid for it; together with the names of securities to contractors' bonds, will be found at large in Document H.

Document I, exhibits the number of engineers, draftsmen, clerks and agents, of every description, employed by the board; and the amount of compensation paid to each. In the selection of competent engineers the State has been fortunate; and the board do no more than justice to their secretary when they acknowledge a faithful and indefatigable discharge of his duty.

The contemplated plan for the ensuing year, and the requisite amount of money to carry them into effect may be briefly communicated. It has already been observed that the past season was almost exclusively preparatory; the next, though not entirely exempt from that condition, will be mainly devoted to the work itself. All the remainder of the division lying between the Grand Rapids, and the termination, together with those portions of the Summit Level, offered in June last, and not let, will be put under contract early in the spring; and this, it is believed, is as much as ought to be attempted. More might possibly be begun, but it is the manifest interest of the State to concentrate on those sections all the laboring force that is likely to be obtained for the coming year. Judging from past experience and the opinions of engineers well informed and contractors, that very little more than a million of dollars can be disbursed in the next twelve months, and to meet that expenditure, the following means, after full allowance for the possible defalcation of debtors, are supposed to be available:

Cash to the credit of the canal fund in the branch bank at Chicago.....	\$306,798 24
Second installment including interest for lots sold in Chicago and Ottawa.....	385,591 39
Loan authorized to be negotiated by the Governor.....	500,000 00
Probable premiums on said loan.....	20,900 00
Making the canal fund for 1837.....	\$1,212,389 63

Under such circumstances there can be no risk in assuming that the year 1837 is fully provided for, without recourse to additional loans, or sale of property, but it will devolve upon the present Legislature, either at this or an extra session, to devise ways and means for the operations of 1838. If the work progresses with the rapidity called for by the public interest, not less than a million and a half of dollars should be expended during the year 1838. Of that sum \$344,278, being the third installment of this year's sales with interest, will be in the treasury, leaving the sum of \$1,155,722 to be raised in such manner as the wisdom of the Legislature may direct.

Some part of it may be prudently derived from sales, but the extent of such a reliance depends upon the highly important question whether the State will continue to support the work with the credit, or throw it upon its own resources, while they last, and supply the deficiency. Document K exhibits as near as can be ascertained the whole amount of lands embraced in the donation from the general Government, which, after deducting sales and

town lots is now 270,182 acres. The commissioners, after diligent inquiry, express it as their unanimous opinion that if these lands and town lots be very gradually and cautiously brought into market, reserving the chief part, until the canal shall have been completed and all its advantages clearly understood, there is more than enough to build it on the present capacious and permanent plan, even should the engineer's estimates prove a million and a half too low. But, on the contrary, if sales be found and all the lands be disposed of before their true value be known, there can not fail to be a deficit of several millions of dollars. Many tracts of lands that would not bring more than five or six dollars per acre, if sold immediately, may be worth, a few years hence, from twenty to one hundred dollars. Innumerable instances of the kind might be advanced—some of them in the vicinity of the canal. The timber lands in particular must become very valuable if preserved from the lawless and reckless depredation which now threaten them. The existing laws impose no restraint as is manifest from the fact that several attorneys of the State have attempted, without success, to arrest the destruction. More efficient laws therefore be enacted as early as possible or any attempt at protection will be useless.

All of which is respectfully submitted, etc.

To the Board of Commissioners of the Illinois and Michigan Canal.

GENTLEMEN:—In pursuance of the duties assigned me, I have the honor to submit the following

REPORT.

A party was organized early in March and placed under the direction of Mr. Talcott, senior assistant engineer, to make examinations of the Summit division of the Illinois and Michigan canal whilst the streams were yet frozen over and an opportunity presented of making those examinations perfectly satisfactory.

Two lines of levels were run across the country lying between Chicago and the Des Plaines river, near the mouth of Portage or Mud lake, the one commencing near the mouth of a broad slough, on the north fork of the south branch of Chicago river, at the point where the former canal surveys were commenced, the other on the north branch of said river and half a mile above the point or the junction of the north and south branches.

The former line or the route of the old surveys was found to be far the most favorable, the distance for which the through cut would have to be made, and the depth of cutting being much less. This line passes over ground but little elevated above the surface of Portage lake at an ordinary stage of water, and which is mostly inundated during the floods of the Des Plaines, the waters of which, it is well known, frequently flows across this low country into the south branch of Chicago river. A particular examination was also made of Portage lake and of the Des Plaines river, with the view of occupying portions of each with the canal should the result prove favorable. But it was found that no saving could be effected by such an arrangement. Portage lake is a succession of ponds on the same level, connected with each other and with the Des Plaines river, and extending about six miles toward Chicago river, nearly in the direction of the canal line. The surface of the water at an ordinary stage is $10\frac{1}{2}$ feet above Lake Michigan, and the mud in the bottom is generally found 5 to 6 feet above Lake Michigan, or from 11 to 12 feet above bottom of canal. To excavate the canal to the requisite depth through these ponds and the marshes on their borders, would be attended with great difficulty and a cost far exceeding that of making the through cut along the borders of the marshes on ground more favorable.

The examination of the Des Plaines river resulted no less unfavorable than that of Portage lake. The bed of this stream for $13\frac{1}{2}$ miles below the point where the canal line enters the valley, except in a few places and for short distances only, is from 8 to 12 feet above bottom of canal, and nothing whatever could be gained by occupying any portion of the channel, as the difficulty of disposing of or keeping out the waters of the river to make the necessary excavations, would more than balance the diminution of the quantity to be excavated by such a location.

From the examinations made it soon became apparent that the Summit division was likely to prove far more expensive than any former estimate had made it, and it was believed that if a permanent and adequate supply of water could be provided without cutting down the Summit so as to introduce the waters of Lake Michigan, a change in the existing law should be recommended to the Legislature of this State at its next session. A level was consequently run in compliance with an order of your board, from a point on the Des Plaines river nearly opposite the mouth of Portage lake to the Fox river at Elgin, 30 or 35 miles south of the State line, with the view of introducing a feeder from that river if practicable, to make up the quantity which, according to the estimate of Mr. Bucklin would be required, exclusive of the whole available supply to be derived from the Calumet and Des Plaines rivers.

From the great quantity of water discharged at all times by the Fox river, it was known that if practicable to bring it on to the Summit at a reasonable expense, an unfailing supply could not only be provided for the canal, but a very great saving in the cost of this division effected and the advantage gained of having the canal completed two or three years sooner than could be otherwise anticipated. But the result of the examination proved unfavorable.

Although Fox river at Elgin was found to be 115 feet above Lake Michigan, yet the deviations of the intervening ridge proved to be too great to admit of the construction of a feeder near the line upon which the levels were obtained, and from inquiries and the cursory examinations made, it was believed that the only probability of effecting the object in view would be by a route a short distance south of the State line.

The elevation of the ridge was here found to be much less than on the route first examined, but still so great as to preclude the idea of conducting the waters across except at an expense that would not be warranted by the object to be obtained.

In the greatest depression that could be discovered, the ridge was thirty feet higher than the river at the distance of about three miles from it, where, as the country still continued to rise toward the Des Plaines, the examination was discontinued. The greatest elevation of the dividing ridge was estimated to be fifty or sixty feet above Fox river.

After these examinations had been made the surveys of the Summit division were finished, and a definite location made of such portions as your board had determined to advertise for letting on the 6th of June. Mr. Edward Smith, senior assistant engineer, then took charge of the locating party and the surveys of the western termination of the canal were continued under his immediate direction.

During the season the line from Marseilles or the grand rapids of the Illinois river to the western termination has been revised, and on the 20th of October was offered for contract (except the structures); of that part of the Summit division not advertised for letting in June has been surveyed, another line surveyed from the south branch of Chicago creek to the Des Plaines, and portions of the work under contract have been laid out for contractors. In short the whole time has been constantly occupied but it has been found impossible to make some examinations intended, and to revise some portions of the line when it is known that changes may be made to considerable advantage.

In making the examinations the present season little or no aid has been derived from the facts collected in former surveys as not a single field book of those surveys has been obtained, and only the general results were known which have been presented to the public in the reports. Particular care has, however, been taken the present season to make such notes as will greatly facilitate operations when a definite location shall be required of that part of the line which has not already been revised.

A particular description of the country through which the line of canal passes has been so often given in the reports of former surveys that now may here be deemed necessary, but the whole time has been divided into three divisions each of which will be separately but briefly described.

SUMMIT DIVISION.

This division extends from the north fork of the south branch of Chicago creek to the first lock and is also made to include the creek or river section of five miles and 44 58-100 chains in length. The length of the river section is computed from the pier at the mouth of the river to the commencement of the through cut at "the mouth of the broad slough" on the north fork of the south branch on the line as located for the June letting. Towing path, however, is only estimated from the point on the junction of the north and south branches, and will be constructed on the south side of the south branch four miles and sixty-four chains, where it will cross by a towing path bridge at the mouth of the north fork, up which it will continue to the mouth of the slough before mentioned. Little expense will be required except for the towing path until the south branch is crossed, when it will become necessary to cut off some points, and in some places to deepen the channel between the mouth of the north fork and the commencement of the through cut.

But the law requires that the canal should commence on canal land, and if the branch thus improved be not considered canal it will be necessary to continue the through cut to the south branch, increasing the length of independent canal forty-eight chains or otherwise the law should be so changed as to permit the most judicious location practicable, which is believed to be on the route first described. A survey has, however, been made in pursuance of instructions received, from a point on the south branch $4\frac{1}{2}$ chains above the crossing proposed at the mouth of the north fork to a point near the Des Plaines river where the line first run and upon which the estimates were made for the June letting, is intersected. Both these lines from the point of starting to the intersection, are straight and occupy similar ground. Upon the first route to the straight line is $7\frac{1}{2}$ miles in length, and upon the other route eight miles and eight chains.

The prairie over which both lines pass is very level, and extremely wet except in times of severe drought. The cutting is generally from seventeen to nineteen feet, through a stiff blue clay.

Below the intersection of the two lines the canal route is down the valley of the Des Plaines. This river for thirteen or fourteen miles has very little descent, the current at low water being scarcely perceptible, and the land so low along its borders as to be overflowed by every slight rise of water.

After the line enters the valley the direction is changed by a gentle curve and another straight line obtained of three miles and fifty chains in length. Several other long straight lines are obtained on this division and the curves may all be gentle and uniform.

The depth of cutting continues about the same down the valley to Brewer's ford as across the wet prairie from Chicago river to the Des Plaines, but the canal will be much more expensive as the excavation is principally rock. The depth of earth on the rock above the mouth of the Saganaskee swamp was found to be much less than was anticipated and less than was represented in Mr. Bucklin's report but he may have found a more favorable line than that upon which our examinations have been made.

The line examined is the most direct, but if one can be obtained with much less rock cutting yet more circuitous it will be proper to adopt it in the final location. A more minute examination of this part of the valley would have been made had time permitted. A different section of canal is presented in crossing the mouth of the Saganaskee swamp where there is earth to a depth of five or six feet the most of which is a semi-fluid resting on rock. The cutting is here about seventeen feet.

From this point to the first lock the rock is generally near the surface and a definite location has been made which it is believed is susceptible of little improvement. The level runs out a short distance after crossing Big run which is about $1\frac{1}{4}$ miles above the first lock and in the bed of which the cutting is two feet. This must of course be taken into the canal.

The two first locks are located on section N. 23, T. 36 N., R. 10 E. of the third principal meridian on land belonging to the State. The canal or basin for about three-fourths of a mile in length above the first lock is estimated 120 feet in width. Distance from commencement to the first lock thirty-four miles and 35 78-100 chains.

No estimate has been made for cutting down the towing path as the whole drainage of a considerable extent of country on the southeast side of the canal must be received into it, and it was believed that this would sometime be nearly filled so that a towing path below the surface would be useless.

The estimates on this division are made for a canal sixty feet wide at surface, thirty-six feet wide on the bottom in earth and forty-eight feet in rock excavation, and six feet deep; and a declivity is given to the bottom of canal of the tenth of a foot per mile.

This division of canal is divided into sixty-eight sections, of which fifteen are now under contract. The estimated prices are in some instances a little below those for which similar kinds of work have been let, but there can be no reasonable doubt that they are high enough to afford contractors a fair profit with judicious management.

The character of the work is now better known than it was at the commencement of operations, considerable progress having been made in its execution. The rock is stratified limestone, the most of which can be quarried without great difficulty, and the strata are found to adhere so closely as almost entirely to prevent the water from coming between them, as was apprehended before any of the work was let. The regular are generally from two to six inches thick, and the stone is of a quality that will be valuable for building purposes.

The expense of constructing this division of canal and the time that will be required for its completion will be much greater than was anticipated, yet nothing has occurred in the course of examinations and experiments made during the present season to diminish the confidence previously felt in the entire practicability of the work.

The rock on the sections under contract as well as the rest has been calculated as quarried rock as this being the kind that predominates and probably the only kind that will be met with.

MIDDLE DIVISION.

The middle division extends from the head of the first lock to the upper end of section No. 141 and is 37 miles and 55 88-100 chains in length. From the first lock to the head of Lake Joliet, the Des Plaines is very rapid and the lockage on this part of the line is greater than for any similar distance on the route. There are 6 locks with an aggregate lockage of 57 feet on the first 4 miles.

ABSTRACT OF DIVISION.

2,736,926.38 cubic yards earth excavation. Average piece, 33 35-100c.....	\$309,500 18
Grubbing and cleaning.....	2,273 00
3,077,200.50 rock excavation, 154 8-10c.....	4,763,539 89
13,513.00 embankment, 47 7-10c.....	6,445 70
Waste weir.....	2,000 00
Length 28 miles 71 20-100 chains, cost.....	\$5,683,749 77
River section 5 miles 44 58-100 chains.....	16,565 75
Whole length 34 35 78-100 chains.....	\$5,700,315 52
Add for contingencies and superintendence 3 per cent.....	171,069 45
Amount.....	\$5,871,324 97

Of the above amount the following is under contract:

Grubbing and cleaning.....	\$466 50
138,596.69 cubic yards earth excavation. Average price 28 94-100c per yard.....	40,121 00
828,988.83 cubic yards rock excavation, 150 43-100c.....	1,267,113 82
1,555.00 embankment 30c.....	466 50
	\$1,268,167 82

Should the line leaving the south branch of Chicago river above the locks be adopted the cost of the Summit division would be as follows:

Grubbing and cleaning.....	\$2,275 00
2,881,664.52 cubic yards earth excavation. Average price \$3 13-100c.....	938,123 85
3,077,201.50 cubic yards rock excavation, 156 8-10c.....	4,763,530 89
13,513.00 embankment, 47 7-10c.....	6,445 70
Waste weir.....	2,000 00
Length 29 miles 39 16-100 chains, cost.....	\$5,712,373 44
River section 4 miles 71 67-100 chains.....	13,550 00
Who'e length 34 miles 35 67-100 chains.....	\$5,725,923 44
Add for contingencies and superintendence 3 per cent.....	171,777 69
	\$5,897,701 13
Showing a difference in favor of the north line.....	26,376 16

ABSTRACT OF DIVISION (MIDDLE).

916,269.62 cubic yards earth excavation. Average price 23 30-100c.....	\$213,566 38
Grubbing and cleaning.....	7,189 00
116,826.50 rock excavation, 93 87-100c.....	159,421 05
1,993,524 27 embankment, 29 15-100c.....	581,155 68
60,102 slope wall, \$3.00.....	180,306 00
74 feet lockage, 2,781 89-100.....	205,860 00
2 guard locks, each \$13,100.....	21,200 00
2 dams, \$3,679.....	7,358 00
2 aqueducts, \$5,764.....	13,528 00
12 culverts, \$1,959.....	23,508 00
3 waste weirs, \$1,375.....	4,125 00
2 sluices or paved water-ways, \$250.....	500 00
9 bridges, \$1,810.....	16,290 00
Amount.....	\$1,439,007 11
Add for contingencies and superintendence 3 per cent.....	71,950 35
Length 37 miles, 55 85-100 chains, amount.....	\$1,510,957 46

Amount of this division. For the distance the character of the country is very unfavorable to the construction of the canal, the rock as on a part of the Summit division being near the surface and in some places entirely bare. The excavation of rock will not be difficult, and it is probable that stone of a suitable quality for building locks may be obtained within the prison of canal. Embankment, which by the arrangement of the levels is avoided as much as possible, will be expensive, as the earth to form it can not be conveniently procured.

At Joliet the line crosses the DesPlaines in the pool of a dam. Two routes were here examined but the manner of crosses is in both cases the same.

It will be seen by a reference to the map that the two lines diverge at a point below Norman's mill dam, and unite again soon after the line on the slough route crosses the river, which is near the center of section 16, and that the river route is 15 chains shorter than the other.

A description and comparative estimate of the two routes were presented to your board in August last, but as no decision was then made on the subject, I have made out the present estimate on the cheapest route, or the one through the slough leaving the definite location for further decision.

A short distance below the mouth of Hickory creek the rock at surface disappears, and the excavations for several miles will consist chiefly of coarse gravel and the canal will require lining.

The line traced runs near the base of Mt. Joliet on the left, and farther on, near the base of Mt. Flat Head on the right, and crosses Rock creek about one-fourth of a mile above the crossing of Mr. Bucklin's survey by an aqueduct of three spans of 30 feet each. The channel will require widening and deepening for a short distance in order to give the necessary room to pass the stream securely.

After the creek is crossed the line enters a depression which extends to the DuPage and through which the waters of that river in time of floods frequently flow. This may easily be prevented by a slight guard bank at the head of the depression near the river.

At this point the line approaches within a few chains of the DuPage, the surface of which at low water is six inches above top water line of canal, and a feeder might be introduced at a small expense were one required, but as it is proposed to cross this stream in the same manner as the DesPlaines at Joliet, by means of a dam, towing path bridge and guard lock, none has been estimated. Should the plan of crossing be changed from that of a dam to an aqueduct, which upon revising the line may be thought advisable, a feeder should be introduced near this point.

The line surveyed continues from the point mentioned in a depression which appears once to have been the channel of the PuPage for about a mile and three-quarters, then crossing a ridge through the cutting is from 14 to 15 feet descends to the proper level for crossing the river in the pool of a dam by a lock of 10 feet lift and crosses the river about 44½ miles from the point of commencement.

About two miles below the crossing of the DuPage a very difficult and expensive portion of the line commences and extends nearly to Dresden, below the mouth of the Kankakee river. The bluffs which are from 100 to 150 feet in height approach the river so as to be washed by it at their base, and the towing path bank which will be partly or wholly built in the river at the base of the bluffs will require slope wall to protect it against abrasion from the flood waters of the river, for an aggregate distance of 2 miles and 50 chains.

The most expensive portion of this difficult section commences a short distance above the mouth of the Kankakee river and continues to the termination of the bluffs. The base of the towing path will be wholly in the river, and the embankment must be formed by earth taken either from the top of the bluff or from the opposite side of the bluff, for the excavation of any portion of the prism of canal in the bluff would increase its tendency to slip and consequently endanger the canal.

Heavy protection wall will here be required to resist the force of the ice floods of the Kankakee, but it is believed that the estimate of cost presented is sufficient to construct a canal as permanent as it can well be made along clay bluffs which seem so much inclined to slip.

Another mode of passing the bluffs may be worthy of examination before a final location is made of this part of the line between Dresden and Marseilles.

A dam may be built at the foot of the bluffs and a towing path constructed along their base so as to pass this difficult portion of the line by slack water at much less expense than the present estimate of an independent canal, and would undoubtedly be quite as secure an improvement. By raising the water 15 feet (and a dam of this height can be rendered perfectly secure for there is a good rock foundation) the line would be thrown 10½ feet lower than the survey made to lock No. 8, of 8 feet lift between the Aux Sable river and Nettle creek, and 2½ feet lower than the line surveyed from this lock to locks Nos. 9 and 10, a short distance above Marseilles. This would involve the necessity of a change in the plan of crossing the Aux Sable, an aqueduct having been estimated and a dam being required, if the plan suggested hereafter be adopted, and the river would be crossed considerably further down. The line below Dresden would probably be rendered more expensive than it is shown by the present estimate, and some damage would be sustained by the overflowing of land about the mouth of the DuPage, but how extensive this damage would be, how much expense would be saved at the bluffs, and how much additional cost encountered below, are all matters of future investigation.

From the bluffs to the Aux Sable the line is traced on ground which has generally the proper elevation, but is covered in many places by boulders or detached rock, and the crossing of the river effected at a favorable point. An

acqueduct of 4 spans of 35 feet each has been estimated, and also widening and deepening the channel, as the elevation of the aqueduct above the river is not so great as to render it secure from floods without this precaution.

No obstacle of any magnitude is encountered between the Aux Sable and Nettle creek. There is but one lock, the only one between the Du Page and Marseilles, and it is supposed that a more favorable route may be obtained by keeping up the level till after the creek is crossed, crossing both branches considerably higher up than at present and locating the lock soon after crossing. The line surveyed crosses both branches on the border of the low bottom which extends to the Illinois river, the first by a culvert of 24 feet chord and the second or west branch by a culvert of 30 feet chord. It was impossible to determine the high water section of these streams, but culverts of this capacity were supposed to be sufficient.

The distance from Nettle creek to the lower end of the middle division is about 7 miles, and though much of the ground over which the line passes is wet, the canal will not be expensive, as the work consists mostly of light excavation and embankment of easy construction.

ABSTRACT OF MIDDLE DIVISION.

(Another abstract to be substituted.)

Amount of grubbing.—Cubic yards rock excavation, average price.....; cubic yards earth excavation, average price,; cubic yards embankment,; cubic yards slope wall,; amount of structures,; total length,; total, \$.....

The structures on this division are as follows:

(Another abstract.)

Eight lift locks, aggregate lockage, 75 feet; 2 guard locks, crossing Des Plaines and Du Page rivers; 2 dams, crossing Des Plaines and Du Page rivers; 2 aqueducts, crossing Rock Cut and Aux Sable river; 11 culverts, 8 of stone, 3 of wood; waste weirs, road bridges.

WESTERN DIVISION.

The line from the commencement of the western division to the crossing of the Fox river is generally traced on ground well adapted to the construction of a canal and the improvement will consequently be made for this distance at a very moderate cost. There will be two lift locks a short distance above Marseilles, immediately below which a definite location was commenced and finished to the western termination for this October letting. It was found on crossing the line preparatory to putting it under contract, that a straight line might be obtained from the point where the revision was commenced to a point below Ottawa without much increasing the cost and the crossing of Fox river effected at the desired place.

The river is crossed in nearly the same place as in Mr. Bucklin's survey, which is undoubtedly the most favorable between the main bluff and Ottawa. The abutments and piers of the aqueduct will be founded on rock and the west abutment be connected with the rock which forms the bank on that side of the river.

Stone abutments and piers and a wooden superstructure have been estimated, but if stone of a suitable quality for the purpose can be procured at a reasonable cost, the whole structure should be formed of durable, cut stone masonry.

From all that can be ascertained of the high water section of the river, it is supposed that an aqueduct of 8 spans of 40 feet each will give water very sufficient to discharge the greatest floods that ever occur.

The same level is continued after crossing Fox river to the head of a marshy depression near the Miama bluff where a lock of 10 feet lift (Lock No. 11) will be required. Through this marsh which seems to be formed by springs breaking out from the foot of the bluff but which can be drained with-

out difficulty, the canal is located till it strikes the foot of the main bluff along which it continues with single embankment to Lock No. 12 also of 10 feet lift, which is located a short distance above Buffalo rock. The line keeps very near the bluff from this point to the steamboat basin near the termination, except for about 3 miles above Utica, where the curve of the bluff is avoided and a straight line obtained.

From the first lock below Ottawa to the termination, the canal will pass through much wet ground and below Utica it will be expensive. The bottom of the Illinois river has become so low as to be overflowed in time of floods to the base of the main bluff and the necessity of keeping a level sufficiently high will render it necessary to make very heavy embankment where in some cases the material to form it with, is not conveniently obtained.

The only streams of any magnitude between Fox river and the termination, Pecumsagan creek and the Little Vermilion river, for the crossing of which aqueducts have been estimated; for the former an aqueduct of 2 spans of 30 feet each, and for the latter, one of 5 spans of 35 feet each, both to be built with stone abutments, piers and wooden superstructure.

Immediately after crossing Pecumsagan creek, Lock No. 13 of 7 feet lift is located, which brings the level of top bank within 2 feet of extreme high water mark of the Illinois river, and is as low a level as it would be safe to adopt. A short distance below this lock the line passes over a projecting point called "Camp Rock," composed of soft sandstone of the same character as that in the vicinity of Ottawa, elevated about 60 feet above bottom of canal, and through the distance to be excavated is about $1\frac{1}{2}$ chains.

One mile and a half above the termination the Little Vermilion river is crossed, and about half a mile below the crossing the line leaves the main bluff and Lock No. 14 and 15 of $12\frac{1}{2}$ feet lift each, are located. Lock No. 15 is located near the center of section 15, and directly below is the steamboat basin, containing an area of $5\frac{1}{2}$ acres. There will also be a spacious basin found between the two locks. From the Little Vermilion the Lock No. 14, the canal will be made at least 90 feet wide at surface, and from the commencement to the termination of the curve immediately above the lock, this width is considerably increased.

The steamboat channel from the basin to the river will be excavated so as to give a width at bottom of 100 feet, at surface 118 feet, and a depth of 6 feet at low water, and have its banks, like those of the steamboat basin, protected by a slope wall to prevent injury from the agitation of the water of the boats.

From Lock No. 14 to the termination, a distance of nearly a mile, a guard bank will be raised on the south side 3 feet above the highest floods yet known, and be protected on the outer slope from abrasion by the floods of the river by a strong protection wall. This bank will have sufficient width on top to form eligible sites for warehouses, the contract for its construction requiring that all the earth excavated from the steamboat channel and sufficient from the basin to construct it of the requisite dimensions, be placed in said bank.

The termination of the canal is made on the corner of section 21 in township 33, N. R. 1 east of the 3d principal meridian.

Connected with the western division of the canal is the Fox river feeder of 4 miles and 6 chains in length. The site selected for the dam and guard lock at the head of the feeder is at the head of the Fox river rapids where Mr. Evans' mill-dam now stands.

The feeder is estimated 40 feet wide at surface, 26 feet wide at bottom and 4 feet deep and a declivity allowed of 3 inches per mile, but this may be increased as well as the dimensions of the feeder so as to draw through almost any quantity of water desired. The fall from top water line of canal to low water of Fox river where the main line crosses is 37 feet, and it is supposed that 5,000 cubic feet of water per minute may here be drawn from the canal for hydraulic purposes without injury, and an equal quantity be passed through the main line to be used at all the locks between this place and the termination. This will give a power at Ottawa alone sufficient to drive at least 40 pairs of millstones of $4\frac{1}{2}$ feet in diameter.

No definite location has been made of the feeder as it was not offered for contract, but it may be introduced at almost any point desired in order to give the greatest value to the canal property without materially enhancing the cost of its construction, provided the south side of the river be adopted as in the survey.

Should it be advisable to make a connection with the Illinois or Fox river at Ottawa by means of a short canal, and the necessary descending locks may be so located upon State property that the water power may be used thereon and thereby greatly enhance its value.

The Fox river feeder may be made to supply the line not only from the point where it is introduced, to the termination of the canal, but also back to the Grand rapids, should there be any accident be a deficiency in the supply of water above this point.

ABSTRACT OF DIVISION (INCLUDING FEEDER.)

Cubic yards earth excavation, average price,; cubic yards rock excavation, average price,; cubic yards embankment, average price,; cubic yards slope wall, average price,; 3 aqueducts, Fox R. and L. Vermilion and Pecumsagan swamp; 1 dam, Fox river feeder; 1 guard lock, Fox river feeder, 7 lift locks, lockage 68 feet, at \$.; 13 culverts, 4 of stone, 9 of wood; 5 waste weirs; 2 road bridges. Total \$.

Total length of line navigable, including Fox river feeder and Chicago river, 105 miles and 72 78-100 chains. Total lockage on the whole line 142 feet.

For convenience and accuracy in estimating the line has been divided into sections, varying generally to 30 to 42 chains. An abstract is annexed showing the length and cost of each particular section, and those which are wholly or in part under contract are marked as may be seen by reference to the abstract.

■ For a more accurate understanding of the position of the line, the comparative deviation of various points, etc, reference may be had to the accompanying maps and profiles. The summit division is represented on maps Nos. 1 and 2, the middle division on maps Nos. 2 and 3, and the western division embracing the Fox river feeder on map No. 3.

ABSTRACT OF DIVISION.

Grubbing and cleaning.....	\$2,547 00
1,234,492.16 c. yds. earth excavating, avg. price, 23 9-10c.....	295,143 40
41,662 c. yds. rock excavation, avg. price, 123 82-100.....	51,584 85
1,200,801.08 c. yds embankment, average price, 25 26-100.....	303,292 40
19,352 c. yds. slope wall, average price, 561 74-100.....	108,709 00
68 feet lockage, average price, \$3,000 per ft.....	204,000 00
3 aqueducts—Fox river. Pecumsagans, Little Vermilion.....	84,346 00
12 culverts, 4 of stone, 8 of wood.....	18,808 25
6 waste weirs, each \$1,442.....	8,652 00
6 sluices, or paved water ways, \$275.....	1,650 00
2 bridges, each \$1,800.....	3,600 00

\$1,082,332 90

Add for contingencies and superintendence per ct..... 54,116 45

Length, 29 miles 55 20-100 chains. Cost..... \$1,136,449 35

Of the above amount the following proportion is under contract:

Grubbing and cleaning.....	\$1,300 00
588,299.95 c. yds. earth excavation, avg. contract price, 29 75-100.....	175,031 68
435,283.36 c. yds. embankment, " " 28 30-100.....	123,208 44
15,242.36 c. yds. rock excavation " " 1.12 1/2.....	17,147 25
19,352 c. yds. slope wall " " 5.61 74-100.....	108,709 00

\$425,396 37

ABSTRACT OF FOX RIVER FEEDER.

218,992.00 c. yds. earth exca. avg. price, 22 98-100c.....	\$50,340 32
23,000.00 c. yds. rock, 75c.....	17,250 00
131,215.00 embankment, 20c.....	26,253 00
1,470.00 slope wall, \$1.50.....	2,205 00
Dam across Fox river.....	14,000 00
Guard lock (composite).....	12,000 00
1 road bridge.....	2,800 00
2 culverts.....	4,300 00

Add for contingencies and supt's per ct. 5 per ct.....	\$129,148 32
	6,457 41

Length, 4 miles 6 chains—cost.....	\$135,605 73
Length of main line, 29 miles 55 20-100 chains—cost.....	1,136,449 35
Length of feeder, 4 miles and 6 chains—cost.....	135,605 73

Length of navigable line including feeder, 33 M. 61 20-100 chs	\$1,272,055 08
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GENERAL SUMMARY.

Summit division including Chicago river, 34 M. 35 78-100 chs...	\$5,871,324 97
Middle division, 37 M. 55 80-100 chs.....	1,510,957 46
Western division—Fox river feeder, 33 M. 61 20-100 chains.....	1,272,055 08
	\$8,654,337 51

Total length of navigable canal including Fox river feeder and Chicago river, 105 miles 72 78-100 chains—total lockage 142 feet.

GENERAL REMARKS.

The estimated cost of the Illinois and Michigan canal here presented so far exceeds any former estimate that some reasons may justly be required for the great difference.

In the first place the character of the work has not well been understood, no minute examination having been made except by Mr. Bucklin whose estimate of rock excavation on the Summit division (which form a large item of the cost of the whole work) was even higher than that now submitted, when the comparative sections of the two canals is taken into consideration. The dimensions of the canal estimated by Mr. Bucklin, were as follows, viz:

Width at top water line forty feet, at bottom twenty-six feet, and depth four feet, the cross section consequently 132 feet.

Dimensions now estimated, sixty feet wide at surface, thirty-six feet at bottom and six feet deep in earth excavation, and the same width at surface and the same depth, but forty-eight feet wide at bottom in rock excavation; section in earth 288 feet, and in rock 324 feet. Thus it will be seen that the cross section of the canal now estimated is more than twice as great below top water line as that estimated by Mr. Bucklin.

The comparative sections of embankment on the two canals will not vary materially from these in excavation, but the present estimate of embankment is made higher in proportion than the former. The cost of all the structures is also estimated much higher. In estimating these reference has been had not only to the high prices for similar kinds of work, but the greater difficulty of executing work in this country, and the uncertainty of procuring materials of a suitable quality within a convenient distance. Structures generally of the most permanent kind have been contemplated though the exact plan has in most cases been left to future determination. Locks have been estimated on the supposition that they will be constructed of the same dimensions and in the same manner as those contemplated on the Erie canal enlargement, viz: Eighteen feet wide at top water line and 110 feet long in the chamber, and be composed of the best hydraulic stone masonry.

The estimates throughout the line have been made for the present terms and with a view to the present condition of the country. It may be presumed that labor, provisions and everything necessary for the construction of the canal are now at their highest price and any change of times must be for the better. Consequently should such change take place before the work is all under contract, there will be a reduction in prices which will reduce the cost of the work below the estimates. There are other reasons why the cost of canal may be reduced below the estimates. On a more critical examination of the line not under contract, considerable improvement may be made, and materials may be procured more conveniently and at a much less cost than is now anticipated. The attention also of efficient contractors in other states may be more generally attracted to this important improvement, and a greater competition take place at future lettings.

It should be remarked, however, that in the estimates of rock excavation, a price has been fixed for stratified rock or such as may be quarried, and should any part of it prove solid (which is not anticipated) the price must be somewhat increased.

The estimate includes the whole cost of the canal, but from this should be deducted the amount paid to contractors and the cost of grubbing the towing path along the south branch of Chicago river in order to show what remains to be done.

Total amount of estimate	\$8,654,377 51
Total amount paid to contractors.....	30,383 01
Total amount grubbing tow path.....	3,515 75

Amount remaining to be done.....	\$8,620,438 75
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Public expectation may be disappointed when the small amount of work done on the canal this season shall be known and compared with the great amount which still remains. But there is no reason whatever for discouragement. As much has been done as could reasonably have been anticipated. In the spring there were neither contractors, mechanics nor common laborers in the country and when the first work was let on the 6th of June, it was with difficulty the contractors could procure laborers to build their shanties. It was also with great difficulty that the necessary tools, carts, barrows, teams, etc., were procured to commence operations with. The season, consequently, was far advanced before much could be done, but there are now about 350 laborers on the line, and the number can be increased as fast as contractors are prepared to receive them, so that there can be no reasonable doubt that the work will be vigorously prosecuted the present winter and the coming year.

The highest praise is due to all those who have so materially assisted during the past season in the field and in the office. Mr. Talcott's duties have been particularly arduous, as the direction of the field work, since Mr. Smith left the service in July, has devolved mostly on him. He also prepared the maps and profiles for the lettings in June and October, and has rendered essential assistance in making out the estimates of the line.

Messrs. Terrell, Hanchett, Killaby, junior assistant engineers, have all been actively and usefully engaged. Mr. Terrell has done most of the compass work. Mr. Hanchett has acted as assistant at the level, and Mr. Killaby has executed the maps and profiles accompanying this report.

All of which is respectfully submitted,

WILLIAM GOODING,

Chief Engineer of the Illinois & Michigan Canal.

ABSTRACT OF THE COST OF SECTIONS ON THE SUMMIT DIVISION.

Numbers Section.	Length Chains.	Cost.	Description of Work.
Chicago R....	2,755 ⁷ / ₁₆	\$16,565 75	Earth excavation.....
1.....	40	18,466 55	"
2.....	40	24,715 96	"
3.....	40	35,581 59	"
4.....	40	37,482 35	"
5.....	40	42,440 38	"
6.....	40	45,694 87	"
7.....	40	49,164 42	"
8.....	40	52,391 56	"
9.....	40	49,839 40	"
10.....	40	50,452 78	"
11.....	40	44,503 80	"
12.....	40	43,198 18	"
13.....	40	47,434 51	"
14.....	40	40,228 78	"
15.....	40	45,691 46	"
16.....	29 ³ / ₁₆	35,175 88	"
17.....	30	81,298 66	and rock.....
18.....	30	90,893 88	"
19.....	30	115,632 47	"
20.....	30	100,340 41	"
21.....	30	122,964 63	"
22.....	30	129,689 94	"
23.....	30	96,198 55	"
24.....	30	95,922 11	"
25.....	30	118,846 23	"
26.....	30	105,722 03	"
27.....	30	109,603 41	"
28.....	30	101,267 82	"
29.....	30	92,696 61	"
30.....	30	105,963 68	"
31.....	30	98,271 12	"
32.....	30	113,059 70	"
33.....	30	104,351 18	"
34.....	30	112,728 27	"
35.....	30	93,971 09	"
36.....	30	107,828 14	"
37.....	30	107,195 72	"
38.....	30	120,059 82	"
39.....	30	110,403 06	"
40.....	30	119,188 36	"
41.....	30	107,898 06	"
42.....	65	285,564 24	"
43.....	30	92,936 01	"
44.....	30	104,163 85	"
45.....	30	132,692 03	"
46.....	30	119,990 39	"
47.....	30	116,747 43	"
48.....	30	111,425 66	"
*49.....	30	110,845 61	"
*50.....	30	108,299 29	"
*51.....	30	118,480 54	"
*52.....	30	88,709 26	"
*53.....	30	82,569 60	"
*54.....	30	89,035 40	"
*55.....	30	82,447 79	"
*56.....	30	85,635 26	"
*57.....	30	83,423 48	"
*58.....	30	79,515 44	"
*59.....	30	68,119 95	"
*60.....	30	67,784 23	"
*61.....	30	58,928 54	"
62.....	30	49,289 84	"
63.....	30	52,702 90	"
*64.....	36	62,625 25	"
*65.....	39	31,516 52	"
*66.....	60	19,268 04	"
67.....	45	13,480 00	"
68.....	57	42,676 80	Canal 120 feet wide passing through Lockport...
	2,755 ⁷ / ₁₆	\$5,700,515 52	

*Denotes the sections under contract.

MIDDLE DIVISION.

Numbers Section.	Length Chains.	Cost	Description of Work.
69.....	48.30	\$101,723 51	Locks No. 1-2, each 10 ft. lift, exca. prime'y. rock.
70.....	30	11,813 85	Excavation mostly rock.
71.....	42	53,206 96	Lock No. 3, 10 ft. lift, rock excavation.
72.....	30.2	13,440 89	Plain.
73.....	42	49,144 25	Lock No. 4, 10 ft. lift.
74.....	42	19,563 00	Plain.
75.....	42	25,780 00	Bridge.
76.....	42	18,436 00	Plain.
77.....	42	44,389 55	Lock No. 5, 8 ft. lift.
78.....	42	55,666 17	Lock No. 6, 8 ft. guard lock, dam and two brdgs.
79.....	42	35,844 75	Rock excavation.
80.....	42	9,546 40	Plain.
81.....	42	14,511 40	"
82.....	42	11,057 05	"
83.....	42	13,269 75	"
84.....	42	10,596 28	"
85.....	42	5,097 68	"
86.....	42	8,686 44	"
87.....	42	16,875 00	Aqueduct over rock, etc.; towpath bridge.
88.....	42	10,576 30	Plain.
89.....	42	8,056 46	Bridge to change towpath.
90.....	42	5,061 58	Plain.
91.....	42	3,695 92	"
92.....	42	12,492 60	"
93.....	42	9,430 50	"
94.....	42	5,991 95	"
95.....	42	4,805 85	"
96.....	42	3,534 60	"
97.....	42	20,066 85	" deep excavation.
98.....	42	41,121 40	Lock No. 7, 10 ft. lift; towpath bridge, slope wall.
99.....	42	31,491 25	Guard lock-dam across Du Puge R. towp. brdg.
100.....	42	7,534 77	Plain.
101.....	42	6,826 62	Sluice.
102.....	42	11,184 34	Stone culvert, 6 ft. chord, waste weir.
103.....	42	52,966 12	" 6 ft. " "
104.....	42	53,646 95	" 8 ft. " "
105.....	42	24,602 49	" 6 ft. " "
106.....	42	37,504 75	Slope wall, heavy embankment.
107.....	42	100,122 60	"
108.....	42	113,912 10	"
109.....	42	42,540 06	"
110.....	42	10,035 83	Wood culvert, 6 ft. chord, waste weir.
111.....	42	5,933 04	Plain.
112.....	42	8,731 78	Paved water way.
113.....	42	17,606 00	Plain.
114.....	42	20,211 00	Aqueduct over Aux Sable and Du Page rivers.
115.....	42	10,535 25	Plain.
116.....	42	5,762 98	"
117.....	42	7,557 00	"
118.....	48	34,301 12	Lock No. 8, 8 ft. lift.
119.....	42	5,318 49	Plain.
120.....	42	5,171 45	"
121.....	42	6,215 94	"
122.....	42	4,957 24	"
123.....	42	6,902 91	Wood culvert, 6 ft. chord.
124.....	42	4,365 00	Plain.
125.....	42	6,448 40	Waste weirs.
126.....	42	32,571 56	Stone culvert, 24 ft. chord, S. E. branch Nettle creek.
127.....	42	22,655 32	Culvert, 30 ft. chord, over W. branch Nettle creek.
128.....	42	4,880 40	Plain.
129.....	42	4,495 40	"
130.....	42	4,132 40	"
131.....	42	9,357 86	Paved waterway.
132.....	42	10,385 70	Stone culvert, 6 ft. chord.
133.....	42	8,212 04	Wood culvert, 4 ft. chord.
134.....	42	4,748 04	Plain.
135.....	42	5,309 06	"
136.....	42	18,165 75	Wood culvert, 12 ft. chord.
137.....	42	10,300 40	Plain.
138.....	42	5,549 96	Tow path bridge.
139.....	42	7,096 80	Paved waterway.
140.....	42	5,282 86	Plain.
	3,015.30	\$1,439,007 11	

ABSTRACT OF WESTERN DIVISION.

Numbers Section.	Length Chains.	Cost.	Description of Work.
141.....	42	\$5,450 00	Plain.....
142.....	42	7,389 44	".....
143.....	42	1,008 04	".....
144.....	42	17,035 25	Rectangular wooden culvert, equal to 15 ft. ch
145.....	42	1,971 20	Plain.....
146.....	42	16,563 48	Rectangular wooden culvert, equal to 6 ft. ch
147.....	42	12,629 00	Some rock.....
148.....	42	5,495 34	Plain.....
149.....	42	23,852 18	Stone culvert, 18 ft. chord, waste weir
150.....	42	8,003 80	Plain.....
151.....	42	4,953 08	".....
152.....	42	7,809 34	".....
153.....	42	5,785 00	".....
154.....	27	61,711 02	Stone culvert, 16 ft. chord, 2 lift, No. 10, lock
155.....	42	4,151 94	Plain through Marseilles.....
156.....	57	16,724 55	Stone culvert, 12 ft. chord.....
157.....	42	3,746 90	Plain.....
158.....	42	14,493 45	Stone culvert, 11 ft. chord.....
*159.....	42	5,412 20	Plain.....
*160.....	42	5,121 25	".....
161.....	42	5,347 11	Waste weir.....
*162.....	45	4,304 95	Wood culvert, equal 8 ft. chord.....
163.....	42	3,879 94	Plain.....
164.....	42	6,012 54	".....
165.....	42	4,392 99	".....
*166.....	42	11,092 64	Wood culvert, 6 ft. chord, road bridge, waste w
167.....	42	96,312 34	Fox river aqueduct.....
*168.....	45	12,060 45	Waste weir, road bridge.....
*169.....	42	5,189 47	Plain.....
170.....	42	6,169 04	Wood culvert, 6 ft. chord.....
171.....	42	5,751 11	Wood culvert, 8 ft. chord.....
172.....	42	37,784 31	Lock No. 11, 10 ft. lift.....
173.....	42	5,915 42	Plain.....
174.....	42	8,584 25	".....
175.....	42	40,292 20	Wood culvert, 16 ft. chord, lock No. 11, 10 ft. lift
176.....	42	3,985 21	Plain.....
177.....	42	6,061 65	".....
178.....	42	5,071 93	".....
179.....	42	4,514 02	".....
180.....	42	5,637 27	".....
181.....	42	5,820 43	".....
182.....	42	7,365 53	".....
183.....	42	4,576 30	".....
184.....	42	6,079 43	".....
185.....	42	5,796 39	".....
186.....	42	20,228 33	Some rock excavation opposite Utica.....
187.....	42	11,902 68	Some rock excavation opposite Utica.....
*188.....	42	11,851 50	Plain.....
*189.....	42	10,685 68	Waste weir.....
*190.....	42	38,731 68	Aqueduct across Pecumsagan creek, lock No.
*191.....	42	34,323 27	7 ft. lift.....
*192.....	42	18,326 80	Cutting through camp rock.....
193.....	42	13,255 78	Waste weir.....
*194.....	42	31,941 10	Aqueduct across Little Vermilion.....
*195.....	42	150,556 90	Includes steamboat basin, locks 14, 15.....
*196.....	30	94,924 42	Steamboat channel, lockage 25 ft.....
*197.....	29 ¹ / ₂	97,112 48	Steamboat channel.....
		\$1,062,332 90	

* Denotes the sections under contract.

FOX RIVER FEEDER.

Numbers Section.	Length Chains.	Cost.	Description of Work.
1.....	81	\$43,082 90	Dam across Fox river, guard lock, road bridge..
2.....	81	31,922 69	Rocky bluff.....
3.....	81	48,417 20	Deep cut culvert.....
4.....	86.5	5,725 62	Plain.....
		\$129,148 32	

This communication and the reports of the Canal Commissioners and their engineer were referred to the committee on canal and canal lands, who on the 15th day of February, 1837, submitted the following report:

The committee on canal and canal lands, to which was referred the message of the Governor transmitting the annual report of the Canal Commissioners; also a report of the committee on roads and canals of the House of Representatives, have had the various matters submitted to them under consideration, and submit the following as the result of their deliberations.

From the examinations of those documents it will be seen, that the questions presented for consideration naturally bring before the committee inquiries touching the whole course of many years' legislation upon the subject of the canal. Questions which ought long since to have been investigated and definitely settled, and which it must be presumed have been fully considered and decided upon by previous legislative bodies, are again presented with the view of an almost entire change and total reversion of all previous legislative action. The committee have not thought proper to assume the correctness of the policy and measures heretofore adopted without investigating the facts and reasons urged in favor of the change. In proceeding to the investigation of this subject, the committee will endeavor to divest themselves of all prejudice in favor of preconceived opinions, growing out of previous action in their legislative capacity upon the same subject. It is deemed proper, however, to state, that in the opinion of the committee it is incumbent upon those urging and proposing changes of action upon a subject of such vast importance to show that such changes are practicable, and are consistent with the public faith, and the character and dignity of the State. The first change proposed by the committee of the House is upon the Summit division of the canal line, thirty-two miles in extent.

The proposition is to adopt the high level, as run by Mr. Bucklin, ten feet above the surface of Lake Michigan, using the Calamie and Des Plaines rivers for feeders.

The second is, to substitute the improvement of the Illinois river, from the foot of the rapids to the head of Lake Juliet, for steam navigation by means of locks and dams.

The reasons urged by the committee of the House in favor of the first changes proposed, are: First, the large sum which the canal will cost upon the present plan; secondly, the length of time required for its completion; third, the difficulties of construction; and fourth, that a better plan can be adopted.

All of these reasons except the last strike at the root of the project, and have been often urged against the policy of engaging in a work of such magnitude, and it is to be regretted that the committee did not turn its attention more particularly to the last reason, because, unless it can be made to appear that the changed proposed by the committee is practicable, the arguments with reference to cost, to time, and to difficulties of construction, must have their full weight against proceeding further with the canal.

If the fact can be established, that a canal much less expensive, equally ample, and securing all the advantages and accommodations which could be obtained from the deep cutting, can be constructed upon the plan proposed

by the committee of the House, there will be no ground or point left for disputation. No citizen of Illinois would be found contending against the adoption of such a plan. If, on the contrary, the plan proposed is impracticable, no one desiring the completion of the canal would be willing to abandon the present plan for such reasons as are urged against it.

It is a source of deep regret that local and sectional interests of recent origin, should be made to operate upon a question of such vital importance to the character, dignity and faith of the State. A spirit of rivalry is perhaps inseparable from the existence of towns and villages, whose inhabitants imagine that the prosperity of one would be the downfall of the others. Yet whenever such a spirit shall attempt to exert an influence upon legislative action, upon measures involving both State and National policy, it ought to be met by the representatives of the people, with the requisite firmness to destroy its influence, and put to shame those who have attempted to use it.

In the examination of the questions now under consideration, the committee will first review the legislative action bearing upon this point. In 1823, an act was passed organizing a board of commissioners to consider, devise and adopt the measures requisite to effect the communication by canal and locks between the navigable waters of the Illinois river and Lake Michigan. Five distinguished citizens of the State were constituted the board. An examination and survey were executed under their direction by Messrs. Paul and Post, both of whom stood high as men of science, talents and integrity.

In January, 1829, an act was passed by which a board of canal commissioners was organized, who were required to locate the canal to effect a navigable communication between Lake Michigan and the Illinois river. The canal to be at least 40 feet in width at the summit of the water line, 28 feet wide at the bottom, and of sufficient depth to contain at least 4 feet of water; and to be furnished with such locks, aqueducts and dams, as might be required to secure a safe and convenient navigation for boats at least 75 feet long, 13½ feet wide, and drawing 3 feet of water. No point is fixed in either of those acts for the termination or commencement of the canal; nor was any direction given as to the waters to be used for feeders.

In 1831, the last act referred to was amended, and an examination was required to be made of the Illinois river, from the mouth of Fox river down to the head of steamboat navigation, with the view of ascertaining whether the Illinois river could be improved by dams and locks, or otherwise, so as to secure its navigation as far upwards as the mouth of Fox river. An examination was also required of the Calumet river to ascertain its probable sufficiency as a feeder for that part of a canal between the Chicago and Des Plaines rivers. In 1832-3, after an ineffectual attempt to change the character of the improvement, from a canal to that of a railway, the board of canal commissioners was abolished, and all further progress of the work suspended. In 1834-5, another act was passed which provided that the canal shall not be less than 45 feet wide at the surface, 30 feet at the base, and of sufficient depth to insure a navigation of at least 4 feet, to be suited for ordinary canal boat navigation, to be supplied with water from Lake Michigan and such other sources as the canal commissioners may think proper. No point of termination was fixed by this act. The act of 9th January, 1836, under which the late canal commissioners acted, provides that the canal shall commence at or near the town of Chicago, on canal lands, and shall terminate near the mouth of the Little Vermilion river, in LaSalle county, and on land owned by the State. These acts of the Legislature are referred to, in order to present before the Senate, in one view, the real points in controversy, and to show the reasons upon which the opinion is expressed, that those who propose changes in the action of the Legislature, are bound to show that such changes are practicable, and consistent with proper regard to the interest of the State. It may here be remarked, that an examination of the various laws will show that the provisions upon the point under consideration, were not adopted by accident and without design. The committee of the House, in order to prove the practicability of the change proposed, have made calculations as to the quantity of water required to supply such a canal as is proposed to be constructed, and at page 19 of their report say: "Your committee feel assur-

ed that not only a sufficient quantity of water for all the purposes of the canal can be procured from these two sources (the Calamie and Des Plaines), but that a large surplus will still remain."

No member of your committee having sufficient knowledge of the science of engineering to risk his own judgment upon this question in opposition to the published opinions of gentlemen of acknowledged scientific information, they are compelled to rely upon the opinions of others, in whose judgment they have confidence. Mr. Bucklin, well known to the public, having recently arrived at this place, the chairman of the committee addressed a note to him which together with the reply is as follows:

VANDALIA, Feb. 8, 1837.

Mr. J. M. Bucklin.

SIR:—I am engaged as chairman of a committee of the Senate, investigating the questions which have recently arisen in regard to the change in the plans in constructing the Illinois and Michigan canal, and particularly the question in relation to the abandonment of the project of supplying the canal with water from the lake, and resorting to the Calamie. Not being an engineer, nor familiar with the calculations in relation to the quantity of water required to supply a canal of the size contemplated, I take the liberty of asking your assistance, and request the favor of you to review the calculations heretofore made by yourself and others in reference to the quantity of water in the Calamie, and to state the quantity required for the canal as at present proposed to be constructed. You will also state if there is anything peculiar in the character of the country, to justify the erecting of a canal without providing the usual quantity of water for evaporation and leakage. All the documents, except the report made by you in 1830, will be furnished if desired.

Very respectfully, your obedient servant,

WM. THOMAS,

Chairman of the Committee on Canals, etc.

The following is Mr. Bucklin's reply:

SIR:—It will give me great pleasure to afford you any information that I may possess in relation to the interesting subject which you have before you. I can, however do little more than recapitulate the information that has been derived from various sources respecting it.

The river Des Plaines was gauged, at Laughton's ford, by Messrs. Post and Paul, in the first survey that was ever made of the route of the Illinois and Michigan canal, and the discharge found to be 72,000 cubic feet per hour. They also gauged it at the Cache island, eighteen miles below, when they ascertained the discharge to be 117,000 cubic feet per hour. In October, 1829, it was gauged by Dr. Howard, U. S. civil engineer, who places the discharge at 96,480 cubic feet per hour. At the same place (Laughton's ford) it was again gauged by Messrs. Harrison & Guion, on the 8th of August, 1830, and found to discharge 60,000 cubic feet per hour. The Calamie river was gauged by me in the month of September, 1830, and found to discharge estimated at 320,000 cubic feet per hour. It was also gauged by M. Guion, assistant civil engineer, in the service of the United States, about the same time, and the discharge placed by him at 1,033,000 cubic feet per hour. It may be proper to remark here that the fall of 1830 was a season of extraordinary drought.

On the Erie canal in the State of New York, the supply not being very abundant in some parts of it, great care was taken to ascertain the quantity of water required to supply the evaporation and leakage in dry seasons, and it was determined by experiment that on the middle and western divisions 100 cubic feet per minute per mile was a safe estimate "with proper care in guarding against the waste of water." On the eastern division 125 feet was required. On the canals in the State of Ohio, 100 cubic feet per minute was adopted as the minimum; and in the State of Indiana it has since been adopted as a standard in estimating the supply required for a canal of forty feet surface and four feet depth of water, except in one instance where the canal passes through an uncommonly wet region of country.

The allowance of 100 cubic feet per mile per minute for evaporation and filtration was assumed by me as the basis of all calculations in deliberating the minimum quantity of water to be provided for the Illinois and Michigan canal.

The surface of the canal as at present proposed to be constructed, is sixty feet, and bears the proportion of one and one-half to one to the surface of the canal as at first proposed. The depth of water is now six feet whereas it was formerly four feet, consequently, the pressure of water being as the squares of the heights, and the leakage nearly as the square roots of the heights, the pressure will be more than doubled, and the leakage (taking into calculation the great surface) increased in proportion to one and a half to one. The quantity of water then that will be required to supply the evaporation and leakage in a canal of the dimensions proposed, will be 150 cubic feet per minute per mile; and with reference to the peculiar character of the country through which the canal passes, I know of nothing which would justify a departure from the established rule, in regulating the supply of water. It is true, the upper level is situated in a very wet country, but the levels below dependent upon the summit for water, are located on ground very badly calculated to retain it, and it is possible that more than the ordinary supply may be required.

If the project of supplying the canal from Lake Michigan be abandoned, and the high level resorted to, the length of canal, including feeders, to be supplied with water on the upper level is fifty-six miles, which will require 8,407 cubic feet per minute to supply the evaporation and leakage, and a further supply of 2,112 for lockage, making in all a minimum supply of 10,512 cubic feet per minute.

Very respectfully, your obedient servant,

J. M. BUCKLIN.

Aside from the fact that, according to the most authentic information, the Calamie and Des Plaines do not afford sufficient water for the use of the canal, it is an admitted fact that the Calamie takes its rise in Indiana. From the latest maps it appears to bend through the corner of Illinois and pass into the lake near the State line. It is contended by some that it formerly passed into the lake in Indiana; it is, however, certain that the State of Indiana may use the water of the river to the exclusion of Illinois. The committee are not advised of any improvement projected by the State of Indiana requiring the use of this river. But the testimony of Lieutenant Burnett herewith submitted, although not conclusive, tends strongly to prove that a company incorporated by the State of Indiana have projected a canal, which will require the use of at least half the water of that stream.

Upon the point now under consideration, the committee have arrived at the following conclusions:

First—That the Calamie and Des Plaines do not afford sufficient water for the use of the canal.

Second—That if they did it would not be prudent or safe to rely upon the Calamie.

In arriving at these conclusions, the committee have relied upon the evidence referred to, consisting of extracts from reports and other authentic documents. It must be evident to all those who have given the subject any examination, that the point on the Calamie where it is proposed to take the water, is below the summit of the canal line, and only 2 feet 81-100 above the level of the lake. The erection of a dam across the Calamie would, therefore, be absolutely necessary, the effects and consequences of which can not with any certainty be calculated or ascertained. One effect would doubtless be the overflowing of an immense tract of country and a subsequent loss of water by evaporation, absorption, etc.

Your committee will now proceed to the examination of the second and third reasons assigned why a change should be made in the Summit division of the canal, viz.: the length of time required and the difficulties and cost of construction. There are reasons which have often been urged and acted

upon by those who have been opposed to the policy of the State's undertaking so stupendous a work; but the judgment of the people has long since been pronounced against their sufficiency. Your committee will not pretend but that there are many difficulties to be encountered in the prosecution of the work, and that from five to eight years may be required for its completion. Having arrived at the same conclusion with all others who have examined the subject (except the committee of the House), that in order to construct such a canal as the nation has a right to expect, the waters of the lake must be used. The question naturally recurs, shall the State persevere in the work, or shall the project be abandoned? These are the real questions to be considered, in answering the reasons assigned for the proposed change: and as these questions are general and applicable to the whole line of the work, their consideration will be deferred until the second proposition for a change is considered and disposed of.

The second reason urged, viz.: that the cost of the improvement will be greatly diminished will not be controverted, but of the value of that improvement compared with the value of the canal and the comparative advantages of the two descriptions of improvements, have not been discussed in the report.

It is a work national in its character, and the people of Illinois should rejoice at the opportunity offered of being instrumental in executing a work of such vast magnitude and importance. The eyes of the civilized world are resting upon us with intense interest, for our success in a work which promises such extensive and incalculable advantages to these United States. The people of the United States are looking to the completion of this work, as forming the last link in an endless chain which shall forever hold these United States in the bonds and pledges of union, and your committee ask in the name of the civilized world, in the name of the people of the United States, and in the name of Illinois, that no local, sectional or private interest be consulted in the decision about to be made.

The magnitude of the work, and the difficulties attending its execution have been long known and considered. The representatives of the people did not engage in the work without a due consideration of those difficulties. The interest which the nation has taken in the project is evidenced by the act of Congress changing the northern boundary line of the State by the purchase from the Indians of a strip of territory extending from the Illinois to the lake, with an eye single to this project, by the act of Congress granting right of way to the State, and by the subsequent act granting lands of value sufficient to defray the whole cost of the work.

It has always been regarded as a national work, and the nation having furnished the means for its execution, have a right to expect that the work shall be projected and executed in a manner suited to the character and views of an united and enlightened people. The fund for this purpose is admitted on all hands to be ample and no citizen of Illinois ought to be willing to see the faith of the State violated, public expectation disappointed, and the beneficence of the national government abused by authorizing any other description of work.

The question may be confidently asked—why should any one desire to disappoint the hopes and expectations of the nation in regard to the character of this work? Can it be supposed that the nation would have extended assistance by so large and extensive a grant of lands towards the execution of a project purely local, a project which at best would not accommodate the trade of Illinois alone five years hence.

To engage in such a project would be sporting with the bounty of the nation and degrading to the character of the State. Who among us would be willing to stand forth before an enlightened, liberal and magnanimous nation and proclaim the sentiment; the nation has furnished us with means to execute a great national work, and although by accepting those means, we stand pledged to use them for the purpose intended, yet as a work of a totally different and greatly inferior character, can be executed for one-half the amount furnished, we will make such a work, and vest the other half of those means in bank stock or in improvements of a character purely local. If

there be among us any who would be willing to assume such an attitude, and in the face of the world proclaim such a sentiment, it is to be hoped, for the honor of the people and dignity of the State, none such can be found in the walls of the Legislature. Such a sentiment strikes at the very foundation of the public faith, and if acted upon would lead to a total subversion and overthrow of our free institutions. The proposition is too monstrous and involves consequences too disastrous to be entertained for a moment; and your committee will not act upon the presumption, nor indulge the idea that any citizen of Illinois will ever be found giving countenance to such a sentiment. Your committee are satisfied that the canal lands will defray all expenditures required in the construction of the canal, upon the enlarged plan proposed by the canal commissioners, and they hope to see the time when its navigation will be made free to all the people of these United States.

There should be no question asked in regard to a supply of water from any other source than the lake, so long as it is known that the means furnished by the nation are amply sufficient to execute the work. In the completion of such a project, computations of time should be made with reference to the existence of the Union, and not with reference to the growth of a village. If, contrary to all calculations, eight or fifteen years shall be required for its completion, this would not justify the State or the people in a violation of their plighted faith. The time is not distant when Illinois must stand at the head and in the front of all of the western states, and when that time shall arrive, nothing could be a source of greater mortification to her citizens or her sisters, than a knowledge that in her infancy, she had been guilty of a violation of public faith.

Your committee are of the opinion that a lateral canal connecting the waters of the Illinois and Michigan canal with the waters of the Calumet is practicable, and will probably be required at some future time. Before any expenditure of money is authorized for that purpose, the consent of the State of Indiana should be obtained to the use of the water of that stream, and an agreement irrevocable, except by the consent of both states, should be entered into, fixing the terms upon which the water may be used, and the terms upon which the citizens of Illinois shall be allowed to navigate the said river.

Your committee highly approve of the decision of the commissioners fixing the size and dimensions of the canal, and they can not but remark, that nothing but the greatest industry and attention to their duties could have enabled the commissioners to have made such progress in the prosecution of the work.

It appears from the report of the commissioners that no addition will be required to the canal fund during the present year, but that provision must be made for the year 1838. For this purpose, it is proposed to sell alternate lots in the town at the termination of the canal, and other towns along the line, to the amount of one million dollars, and to authorize a further loan of five hundred thousand dollars in the event of that amount being required.

In the present state of things it is deemed bad policy to bring into market any of the canal lands. It is believed that under the provisions of an act passed during the present session, those lands can be protected against all further depredations. To carry out the views of the committee, they report a bill, and recommend its passage.

INTERROGATORIES FROM THE COMMITTEE ON ROADS AND CANALS TO THE COMMISSIONERS AND ENGINEER OF THE ILL. & M. CANAL, WITH THEIR ANSWERS.

Question 1st:—What is the fall from Lake Juliet to the present termination of the canal, and what will be the cost of constructing the canal from said lake to its termination on the present plan?

Ans.—The fall from the head of Lake Juliet to the present termination of the canal is about 75 feet. Cost of constructing the canal from the head of the Lake to the termination—\$2,213,557.42.

Question 5.—What is the length of deep cut, or Summit division and what is the average depth of cutting the same upon the present plan?

Ans.—Length of deep cut 26 miles. Average depth of cutting 18 feet. This does not include the whole of the Summit division but the deep cutting only.

Question 18.—Why was not the canal located at the town of Juliet?

Ans.—Because a majority of the commissioners were not satisfied that sufficient examination had been made to justify so important a location. They believed that precipitate action might jeopard the interests of the State, as well in regard to the value of her property, as the permanency of the work, and time has convinced them that while the citizens of Juliett have sustained no injury, the State has been much benefited by the procrastination. Besides the consideration of damages and the use of a large water power. It was thought worthy of deliberate inquiry, whether the plan of crossing the Des Plaines in the pool of a dam, as contemplated by the present engineers, would be as safe as the aqueduct recommended by Mr. Bucklin.

Question 20.—What would be the cost of construction of slack water navigation from the foot of the rapids on the Illinois, to the head of Lake Juliett, taking Mr. Hurd's estimate as a basis?

Ans.—To estimate the cost of making slack water navigation of the Illinois river with any accuracy without a survey is impracticable; and to assume Mr. Hurd's estimate as a basis would show a fair comparison of costs between slack water and the Illinois and Michigan canal, as now estimated; he having estimated lockage (it is believed) at \$1,500.00 per foot lift and the estimate of lockage on the western division of the canal being \$3,000 per foot lift. Other items will also show a great difference.

Q. 29.—What quantity of water will the Calumet discharge per hour, allowing the river to be ninety yards wide, average depth eighteen inches, average current two miles per hour?

Ans.—10560x270x1.5—4,276,800 C. feet.

Q. 30.—What quantity of water do you suppose passes out of the Saganash Swamp and Grassy Lake, also that portion that passes down the Valley of the Stoney Creek as well as that portion of water which empties into the Des Plaines river?

Ans.—In seasons of severe drought, not a drop.

Q. 32.—What amount of water would be required to insure a navigation of four feet water in a canal of the dimensions of the present contemplated one and also one of five feet?

Ans.—This also would depend on the arrangement of the level. The usual allowance of a canal of 40 feet surface and 4 feet deep is 100 C. feet per mile per minute, and if the section be enlarged the quantity should be increased in proportion.

Q. 41.—What is the fall of Summit division and what water will it afford per minute. Also how many run of stone will it drive of a given diameter?

Ans.—The average current through the deep cut or on the Summit level can not be calculated with perfect accuracy; for the fluctuations of Lake Michigan will affect it materially. It is believed however, that a current of one-half mile per hour may be safely assumed as the average for calculation. This would give 12,339 c. feet of water per minute from which deduct lockage water for 100 boats per day equal to 1,362 c. feet per minute and there remains 10,977 c. feet of water for hydraulic purposes.—10,000 c. feet per minute may at least be safely calculated upon.

The results of experiments has shown that 360 feet per minute with 9 feet fall is sufficient to drive a pair of mile stones of 4½ ft. in diameter, consequently 28 pairs (nearly) may be driven for each 9 feet of lockage, or 224 pairs of mile stones on the middle division for the whole of which it is fair to calculate the hydraulic power derived by introducing the waters of Lake Michigan.

The value of this power will be calculated for the income arising from the rent merely, forms but a small part of it. This value consists chiefly in the vast amount of business which such a power when brought into use will create, and the capital which it will employ.

The rent merely may be calculated at \$300 per run of stone or \$67,200 a year which is the interest at 6 per cent of \$1,120,000.

In response to the recommendation of this committee, the Assembly passed an act to amend the act, approved January 9, 1836, as follows:

Sec. 1 *Be it enacted by the People of the State of Illinois, represented in the General Assembly*, That there shall be elected at the present session of the Legislature, by the joint vote of both houses, three practical and skillful citizens of this State, to constitute the board of commissioners of the Illinois and Michigan canal, one of whom shall be designated as the president, one as treasurer, and one as acting commissioner of said board. The said president and treasurer, in addition to the other duties required of them, by the act of which this is an amendment, shall also whenever the public good may require the same, exercise all the duties and perform all the services required by said act, of the acting commissioners. Each and every one of the commissioners aforesaid, when in the discharge of the duties of acting commissioners, shall be subject to the order of the board.

Sec. 2. That it shall be the duty of the commissioners authorized to be elected by this act, to proceed immediately and without delay, to the prosecution and final completion of said canal, upon the plan set out upon by commissioners in the year 1836, in all respects.

Sec. 3. That the said commissioners shall require a survey and examination of the route of said canal as now established, by some skillful engineer, who shall also report to the said board of commissioners, who shall also report the same to the next session of the General Assembly. The said examination shall be made with a view of ascertaining whether there is a sufficiency of water within the legitimate authority of the State of Illinois to use to supply a canal of the same size and dimensions, as the one now contemplated to be constructed upon the Summit level of the said line of canal, the said engineer authorized to be employed under this act, shall take such oath as to the correctness of his estimates, surveys, and conclusions as are usually required of engineers.

Sec. 4. Said board shall also as soon as convenient, authorize a survey and estimate to be made of the route of a canal, diverging from the main trunk of the Illinois and Michigan canal, through the Augsaugeonashke swamp and lake, to intersect the Calumet river at the nearest practicable point, the said work to be constructed whenever the State of Indiana shall undertake a corresponding work, connecting her system of internal improvements with the Illinois and Michigan canal.

Sec. 7. The said commissioners shall have power to cause surveys of such town lots as they may select, to be laid out by such person or persons as they may think proper, the plats of such towns certified by such persons so employed, and said commissioners shall be recorded in the recorder's office in the county where such town is situated, and such plat so certified and recorded or an attested copy thereof, shall be evidence in any court of law or equity of this State, and plats of such town sites, sub-divisions or sections or surveys which have been made and certified by the former commissioners, shall also be recorded in the same manner, and have the same validity as aforesaid.

Sec. 9. That the judge of the circuit court within whose circuit the said canal lands are situated, shall on or before the first Monday in June next, appoint three commissioners citizens of this State, who shall not be interested in any lands within the district of country through which said canal passes, and who do not reside in said district, to be a board for the appraisement and determination of all questions of damages which may arise from the construction of said canal, a certificate of whose appointment under the hand of said judge, shall be recorded in each county in which any of said canal lands lie. It shall be the duty of said commissioners, whenever requested by the board

of canal commissioners, to examine into all questions of damages which may arise between said canal commissioners and any individual or individuals, to make reports within twenty days after such examination, in writing to the said canal commissioners, and file a copy of such reports in the clerk's office of the circuit court in the county in which the land may lie, on which any damages may be claimed, which reports shall contain a full account in writing of said claim, the manner in which it may arise, and all such testimony as may be taken by them in relation to the same. Also an assessment of the damages, if any are awarded, accompanied by a description of the property to be surrendered by such individual to the State, where the questions of damages may relate to the right-of-way, or surrender of land for the use of hydraulic or other purposes; upon the return of said report and assessment of damages aforesaid, the said circuit court at its succeeding term, if in its opinion the damages assessed are not too high, and if no objection be made to the same, shall cause an order to be made of record, directing said board of canal commissioners to pay to such individual or individuals, in whose favor he may decide, such sum as may be awarded for his or their damages as aforesaid, with such cost as such party may have expended in the defense of such claim for damages, to be certified by the court, provided, however, that if upon examination of such returns, assessment and testimony furnished as aforesaid, by said commissioners, if the said court shall be of opinion the said assessment is too high, or the individuals or individual in whose favor such assessments shall be made, shall be dissatisfied with the same, the said court shall proceed to hear and determine the question of damages in such manner as they may deem equitable and just, and the said court is hereby vested with full power and jurisdiction to make all orders and decrees in the premises, and to enforce their observance, necessary to carry into full effect all, or any decision which may be made, provided, that appeals shall be allowed to the supreme court as in other cases, and provided, also, that the court shall have power to compel all persons to pay all costs occasioned by their objections or exceptions to assessments, which are not sustained by the court, and the court shall have power in all cases to make such orders in respect to cost as may be deemed equitable and just. In assessing damages, regard shall be had as well to the benefit as the injury arising from the construction of the canal.

Sec. 10. The canal commissioners shall insist upon the right of the State to the right-of-way through and upon all lands heretofore sold or granted by the State, and also the use of all water and materials required in the construction of the canal under the reservation contained in the tenth section of the act passed January the 23rd, 1829, providing for the construction of the said canal, and under the reservation contained in subsequent laws on the same subject; but if the courts shall decide against this right, then the same mode of proceeding shall be had in reference to said lands, waters and materials as in other cases.

Sec. 13. The canal commissioners shall cause the plats of the towns of Chicago and Ottawa, by which they were governed in selling lots in said towns, to be recorded with the certificates of the late canal commissioners endorsed thereon as to the identity of said plats. They shall also have power to execute and perform all duties heretofore required of canal commissioners in relation to alterations in the survey of the town of Ottawa, provided, that no rights acquired by individuals shall be affected thereby. The plats of said towns, or certified copies thereof, shall be admitted as evidence in all courts or places whatsoever.

Approved March 2, 1837.

During the year 1836, the canal commissioners constructed by grading and bridging what was then known as the Saganaskee road, now known as Archer avenue and Archer road, extending from State street, Chicago, to Joliet.

March 1, 1837, Jacob Fry succeeded W. B. Archer as acting commissioner; ordered by the board that the following persons be and they are hereby appointed as officers and agents of the board of commissioners of the Illinois

and Michigan canal, to-wit: William Gooding, Esq., chief engineer, E. B. Talcott, senior assistant engineer, Walter Terrell, J. S. Hanchett and I. S. Killoly, jr. assistant engineers.

JOLIET, April 20, 1837.

DEAR SIR:—Having been informed that you were appointed acting commissioner for the Illinois and Michigan canal, and that you are at Chicago to organize the board and commence operations for the present season, I take the liberty to inform you that I was in the service of Colonel Archer as surveyor last season and now offer my service to you. There is a little work on hand on section 29 near Chicago (an alteration), some at the Oakwoods section 13 (unfinished) and some at Lockport (part alteration, part unfinished), the alterations (though small) are of great importance to be done before the sale of this land or lots takes place. You will pardon me for thus seeming to meddle with your business; I do it because none but myself and Col. Archer knows what it is. Col. Archer intended that I should do this work (i. e., the alterations) as soon as the frost left the ground. There is no memorandum of this matter at your office (canal office); you shall have this matter fully explained at any time when you call on me. I reside in West Juliet. I should be pleased to serve you as surveyor or engineer, or both, as occasion might require.

Yours most respectfully,

JOSEPH WAMPLER.

Mr. Fry, Acting Canal Commissioner.

N. B.—Please to inform me immediately whether you want my services.

J. W.

MESSAGE.

EXECUTIVE DEPARTMENT,
VANDALIA, January 1, 1839.

SIR:—In compliance with a resolution of the House of Representatives, calling on this department for the report of the board of commissioners of the Illinois and Michigan canal, I have the honor herewith to transmit to you their report made to me in conformity to law, which I received on this morning, and which I respectfully request you to lay before the body over which you have the honor to preside.

I am, sir, with high respect,

Your obedient servant,

THOMAS CARLIN.

To the Hon. the Speaker of the House of Representatives.

(The following reports are given in full for the reason that they show the location of the present canal and give the reasons for any changes in locations which may have been made since first survey in 1824.

REPORT OF THE BOARD OF CANAL COMMISSIONERS.

CANAL OFFICE, LOCKPORT, Dec. 13, 1838.

To His Excellency, THOMAS CARLIN, Governor of Illinois.

SIR:—In obedience to the requisitions of law, the Board of Commissioners of the Illinois and Michigan canal have the honor of transmitting to your Excellency the following

ANNUAL REPORT.

The transactions of the first board, from its commencement of operations to the close of the year 1836, were submitted to the Legislature in January, 1837, soon after which the law was materially amended, important examinations were ordered, additional works were authorized, and the superintendence of the canal was committed to the charge of the present commissioners.

At the called session, held in July of the same year, the new board gave a full detail of their "acts and doings" to the first of June preceding. This report, therefore, as well to facilitate legislative action as to elucidate the subject clearly, will begin at that period and complete the chain of proceedings to the first of the current month.

That the information, herein communicated, might be as satisfactory as possible, the principal engineer was instructed to spare no pains in reporting the progress and condition of every class of construction—the improvements effected in plans and locations—the character of excavations as now developed—the difficulties that have been obviated, and those yet to be encountered—the probable sufficiency of contract prices—and all other minutia in any wise appertaining to his department. He has discharged this duty with his usual frankness and ability, as will be seen by a recurrence to his report, marked A, which has been carefully examined and was found to harmonize so fully with the opinions and observations of the commissioners as to render it unnecessary, on their part, to say much more on that branch of the subject.

The documents marked B, C, and D, are reports from the resident engineers made by order of the board. They are intentionally more diffuse than those of the chief engineer, and are believed to be correct representations of the affairs of the respective divisions.

In accordance with the fourteenth section of the canal law of 1836, the accounts of the treasurer have been regularly collated with those of the branch of the State Bank at Chicago, and their uniform agreement has been certified at the end of each quarter in the minutes of the board. His ample report marked E, exhibits the present state of the treasury—the amount, time and rate of loans—the interest paid and received by the canal fund—the receipts from the sales of town lots, and how many of these lots have been forfeited by the purchasers.

The secretary of the board, who, from the beginning, has acted as disbursing officer of the contingent fund, has discharged that arduous duty with accuracy and fidelity. His books, accounts and vouchers, like those of the treasurer, have been examined and approved from time to time, and are now in creditable order. An exposition of the business of his office, embraced in a report, marked F, will show: 1st. The quarterly accounts of the branch bank at Chicago since the last day of May, 1837. 2nd. The amount of all moneys expended by order of the board, and the heads under which the expenditures have been charged. 3rd. The account of sales of lots at Lockport, Ottawa and LaSalle, with the valuation of each lot, and the sum for which it was sold. 4th. The work done, and the prices allowed for the various kinds of work. 5th. The contracts made, with whom made, and the security given. 6th. The number of engineers, surveyors, draftsmen, clerks and agents, of every description, permanently employed, their names and the compensation paid to each. 7th. The amount expended in provisions and materials to aid the contractors—the quantity of these provisions and materials distributed, and the cost of what remains in store. 8th. The amounts advanced to contractors in money and in materials, over and above their monthly estimates, and also the sums ultimately due to the same contractors in consequence of the regular deduction of fifteen per centum from the value of their work.

Of the several items composing the secretary exposition, the six first enumerated contain such information only as the law specifically enjoins the commissioners to report. The two last have grown out of irregularities forced upon the board by the peculiar condition of the country and of the times. The operations upon the canal during the whole of the year 1836, and the major part of the year 1837, were chiefly confined to preparatory work, such as building houses of accommodation of the laborers, procuring implements, making defences, erecting machinery, &c.; all of which required but few men; and indeed very few had yet arrived in the country. But in fall of the latter year laborers became more plenty, and all the principal work was prosecuted with great vigor. It was soon ascertained, however, that the country was bare of many of the essential materials required by the contractors; among which were iron and steel

for manufacturing their tools and machinery, gun-powder for blasting rock, chains and cordage for their pumps, cranes and railways, and staple provisions for the winter sustenance of their workmen. Derangement of business and heavy pecuniary sacrifices on the part of the contractors were the results of such a state of things; besides which, many of the laborers were reluctantly compelled to abandon the line, and the contractors, deprived of facilities, were unable to employ others who were constantly coming in from Canada and the eastern states. The evil was generally acknowledged to be one of vital character. It dispirited the strongest and most enterprising contractors, and was abundantly calculated to suppress responsible propositions for the remainder of the work, unless at prices large enough to cover all the actual and many alleged disadvantages. Nor was there any reasonable prospect of an early remedy except through the interference of the commissioners. The contractors were evidently too weak in capital to avail themselves of the proper time of the year for accumulating sufficient quantities of indispensable supplies; the bank, if willing, was not in a condition to afford relief, and a reliance upon merchants in so new and remote a country was not only precarious, but calculated to invite monopoly and consequently extortion. It may be safely advanced that on works of magnitude, be the contract prices ever so low, the employer will eventually have to pay whatever it cost the contractors to execute their work; for it is known that they are rarely, if ever, able to finish extensive jobs by which they are to lose. They can not long support themselves without adequate compensation. As soon as they foresee a loss they are almost sure to abandon at all hazards, and work under such circumstances is apt to be relet on disadvantageous terms to the State.

Every thing, therefore, that is done to save contractors from losses and delays that can be averted, will to the same extent promote the interests of the public. Taking these facts and conclusions into view, it was obvious to the commissioners that the contractors must be aided for awhile, beyond the monthly regular payments from which fifteen per centum was to be deducted. Accordingly, at the commencement of the last season, the board complied with the general request of the contractors to furnish them with such provisions and materials as could not be readily purchased in the country; each contractor binding himself in writing to secure the State against loss by insurance, interest, transportation or any contingency, and to pay for the articles as fast as he consumed them, out of his monthly estimates, if required by the board.

A warehouse was built for the purpose on State property at Lockport and so planned and positioned, that while it increased the value of the surrounding property not yet brought into market, it will at any time command a profit on its cost. Table No. 6, annexed to the secretary's report, shows the amount of capital now involved in the transaction to be \$36,917.74, and table No 7 exhibits the extent to which aid has been afforded and the ample security on which it is based. Experience has proven the utility of the measure, both in supporting the old contractors and in obtaining new ones on reasonable terms. Full supplies are now maintained at fair and uniform prices, encouraging the contractor to proceed with confidence and enabling him to make better outfits and to do more work with the same capital and manual force.

On the 13th day of November, 1837, the sealed proposals for work advertised to be let on that day were opened, and contracts were entered into for the remaining sections on the Summit and lower divisions, together with the Fox river feeder, dam and guard lock. Another public letting was held on the 5th day of June last, which resulted in contracts for 21 miles of that portion of the middle division lying between Lockport and Dresden, including structures of every description. The structures of the lower division were let at the same time. It frequently happens in such cases, as it did in these, that several contractors to whom work was awarded failed to commence in proper time, and some not being able to command capital, threw up their jobs; but the vacancies have been subsequently filled at prices as low as could be desired.

The line is now under contract from the Chicago river to the termination at La Salle, with the exception of about 22 miles of shallow cutting between Dresden and Marseilles and some other detached parts, amounting by estimate to \$1,251,103.15, and a mile and a fraction of excavation in the Saganaskee swamp, which from the peculiar character of the work, as described in the report of the chief engineer, must either be executed in part by agents of the State, or wholly deferred until it can be drained through a series of sections below it. To avert the delay incident to the latter course, the first has been adopted, with orders for the immediate preparation of appropriate machinery. Efforts will be made to have every thing ready for a commencement by the breaking up of winter. It was once thought that no subdivision of equal length would cost as much or present as many difficulties as the one which stretches through this famous swamp. The semi-fluid alluvion and vegetable matter of which the swamp is mostly constituted, are not more forbidding in their aspect than they are treacherous in their texture. Hence, for nearly two years it was impracticable at any season by any mode, to penetrate it so thoroughly as to ascertain with certainty its true depth and character. The hard freeze of last winter and the low stage of the river and bordering morasses enabled the resident engineer, with a strong party, to traverse and sound every part of them.

It was found that the Des Plaines could be safely turned into its ancient channel below a low island about a mile in length, redeeming by the process some three or four hundred acres of canal land, and securing to the State an important town site, which by any other arrangement, would have fallen on individual property. Convinced of the practicability of turning and dyking the river and that the flood waters of the Saganaskee valley could be diverted into the Calumic, there was no further hesitation in canceling the contracts on the original circuitous route and locating a direct line costing upwards of a hundred and twenty thousand dollars less, and possessing other obvious advantages independent of the town site, which at no remote period must be worth a large sum of money. For details, see reports of the principal and resident engineers.

In making contracts on the summit division, previous to December, 1836, distinct prices were allowed for "solid rock" and "for rock which in the opinion of the chief engineer may be quarried." This distinction arose in necessity. When the first letting was held in Chicago in June 1836, the commissioners, prompted by policy and public opinion, were compelled to make an experimental letting of a portion of the heavy work without strict regard to its true value. Among the many proposals that were submitted at the time, there were but few from experienced contractors, or such men as could be trusted with difficult undertakings, and these at that early period, with nothing to guide their judgments but a rapid and superficial examination of the country, were reluctant to act upon the assertions of the commissioners and engineers, that the rock to be excavated was wholly stratified. They admitted that the indications were in favor of that position, but urged that "solid rock" might probably be encountered towards the bottom of the deep cutting; and if so, that much higher prices must be allowed than those at which they were willing to take the "quarried rock." The issue was, that the accepted proposals and, of course, the contracts embraced in both classes. But the commissioners continued so firm in their first impression that they disregarded extravagant bids for "solid rock," whenever the same proposal contained a reasonable price for "rock which in the opinion of the chief engineer may be quarried"; and especially as the umpire would be a State agent, and probably the same who had repeatedly advised the board that the administration of the contingency in question would involve no serious danger.

Through the remainder of that year many sections were opened to various depths, yet no earnest demands for solid rock compensation were preferred until just before the meeting of the General Assembly. Those that were then made were promptly resisted, and the petitioners, threatening to appeal to the Legislature, were unsuccessfully encouraged by the commissioners to

pursue that course. It will be remembered that during the session alluded to, a resolution was adopted by the House of Representatives ordering an investigation into the affairs of the canal. The committee, to whom the subject was referred, made, among others of a like tendency, the following comment on the estimates of the chief engineer. "It will be perceived that the item of rock excavation has been estimated as coming within the denomination of quarried rock, whereas all the information which your committee has been enabled to obtain upon this subject, tends to show conclusively that at least two-thirds of the item will fall under the class of solid rock excavation. If this be the fact, and that it has been proved to the satisfaction of the committee, the whole amount, as estimated by the engineer, must be greatly enhanced. By reference to contracts already let as solid rock excavation, it will be discovered that the average price is nearly \$2.55. Assuming this sum, then, as the price for solid rock excavation, and computing two-thirds of the whole amount of rock excavation at about \$2.55 the price for solid rock excavation and the remaining one-third at \$1.55 the price per cubic yard for quarried rock excavation and the sum total for rock excavation on this division is found to exceed the estimate of the engineer, \$2,050,800; by which it appears that the item of rock excavation alone amounts to \$6,814,331. But admitting the whole item to fall under the denomination of quarried rock, it is believed that contractors could not be procured to excavate the same at prices less than those allowed for solid rock, on account of the great elevation to which it would have to be raised, after being quarried, to remove it from the works, a moment's reflection will show the truth of this view of the subject."

These opinions, it is believed, emanating as they did from a high source, stimulated some of the contractors to insist with pertinacity upon an immediate allowance for "solid rock." Others, who made no present claim, spoke freely of their intentions to contest the matter upon the completion of their work; and it was ascertained by the board that some of the parties, encouraged by able counsel, were actually making preparations to fortify their position. In view of all these circumstances, and knowing at the same time the uncertainty of legal decisions, the commissioners were forced to believe that, however unjust the claims, there was imminent danger in permitting the contractors to finish their work, under the existing contracts, if it were possible to prevent it without violating the faith and dignity of the State. It was therefore resolved that while the contractor, in disregard of equity, insisted upon every advantage which he could obtain by law, the commissioners would be equally rigid in ruling him to the letter of his contract; and accordingly the chief engineer was instructed to issue his certificate of abandonment in every case, on the first clear provocation. Some had already violated their contracts by selling them and giving irrevocable letters of attorney, setting forth a valuable consideration; others had failed to commence and prosecute their work in accordance with the reasonable requisitions of the superintending engineer; and it was extremely doubtful whether any of them could complete their jobs within the time specified in their respective articles of agreement. Thus situated, and being apprised of the determination of the Board to coerce justice if longer denied, they were gradually induced to relinquish their disputed contracts and enter into new ones based upon the former prices for "quarried rock," with slight addition in such cases as experience had shown were originally taken at too low a rate. The final settlement of this vexed question is highly advantageous to both parties. The contractor is placed upon a footing which leaves no doubt of his ability to finish his work; and the State, besides avoiding hazardous and expensive litigation, can now estimate with certainty the ultimate cost of her great enterprise.

In the quarterly report of the board, transmitted to the General Assembly in July, 1837, it was stated that a correspondence had been opened with Judge Wright, an eminently "skillful engineer," with a view of the surveys and examinations required by the third section of the amendatory law passed in the previous March. In the meantime, Mr. Burnett, who is the resident engineer of the third division, was instructed to make a critical and thorough survey of the dividing ridge between the Fox and Des Plaines rivers, and within the limits of the State. This duty he performed with great care, elic-

iting information from every accessible source, and indulging those persons who desired explorations of particular depressions previously supposed and asserted to be sufficiently low to afford a cheap feeder.

Judge Wright arrived at Chicago in the early part of October, and on the 20th of the same month, Mr. Burnett made a detailed report, with a topographical map and estimates, of the quantities of excavation and other work necessary to effect the object on the most favorable route of the country was susceptible. At that time and through the whole summer, the Des Plaines river was generally admitted to be unusually flush, as was also the Calumic. No gauges were therefore ordered, and consequently those of the Des Plaines made by the United States engineers in 1830, and of the Calumic, by Mr. Bucklin, were adopted as the basis of the investigation. Keeping in view however, that the truth of these gauges had been strenuously controverted by the advocates of the upper level or "shallow cut," and that the capacity of the Calumic had been contended to be even superabundant, the attention of the examining engineer was particularly directed to the question, whether the Calumic could in any event be classed among waters which the law contemplated as "Sources within the legitimate authority of the State of Illinois;" a question which his reputation for sound judgment in everything connected with canaling, his knowledge of the requirements of Indiana dependent on the Calumic, and his great experience in the adjustment of similar claims, pre-eminently fitted him to answer with confidence. His plain, free, and very decided report, marked G, to which Mr. Burnett's is appended, will afford all the information required by the statute which enjoined the examinations. But notwithstanding the opinion of the commissioners, that the report of Judge Wright,—so completely confirming their original plan—should alone determine the mode of feeding the canal, they still thought it advisable to seize the first opportunity of regauging the summit streams and examining the suitability of the country for sustaining assistant reservoirs. The past dry season rendered the measuring of the Des Plaines almost unnecessary, since for nearly four months the tightest dam that could be erected would not, at the point for taking out a feeder, have saved water enough to propell a single pair of ordinary mill-stones. Repeated gaugings from the 20th of July to the 22d of August, and it was afterwards still lower, gave an average of less than the measurement of 1830. The Calumic was gauged on the 8th of August and again on the 21st of September, by Mr. Talcott, the competent and indefatigable engineer of the Summit division, under the superintendence of chief engineer and two of the commissioners, who assisted in the operation. Every precaution was taken to render the measurements perfect, but owing to the high stage of water in the lake which flowed back upon the only point adapted to the purpose, and the quantity of grass that had recently grown up in the bed of the river, it was impracticable to compute the velocity of the current from top to bottom with all the precision that was desirable. Averaging the different gauges which are believed to be over the truth, the quantity estimated was a fraction less than 7,000 cubic feet per minute, being only 1,600 feet more than reported by Mr. Bucklin, but falling short 10,217 cubic feet per minute of Mr. Belin's estimate as given in the printed report. The inference is fair therefore, that Mr. Bucklin was right, and conclusive that Mr. Belin was either wrong in his calculation or, which is more probable, that the error was typographical. It is proper to mention also that the volume of water continued to decline for some weeks after the last gauging by Mr. Gooding and Mr. Talcott, but the general sickness of the country prevented a repetition of their experiments. An attempt was made on the 8th of October, when it was found that the river had fallen two inches since the last and lowest previous gauge, but the measurement was carried no further. In regard to reservoirs, it is sufficient to say that, besides their pernicious influence upon the health of such a country, it is believed that they could have rendered but little aid in a protracted drought like the one just experienced.

In addition to the services required by law, the commissioners availed themselves of the valuable talents of Judge Wright in general consultation. He was employed to inspect the entire line, and invited to criticise freely and every part of the work in progress, as well as the plans of the chief engineer and of the board, all of which were detailed to him on the ground with

great minuteness. A number of written interrogatories were likewise propounded to him, embracing every subject commented upon by the committee on Roads and Canals, in their report to the House of Representatives at the same session in which the examination was ordered. The report itself had attracted his attention before he arrived in the State. The answers to these interrogatories, and the result of the general inspection are embodied in a separate report to the board, marked H; by which it will be seen that the present plan of the canal, being the same originally adopted, has received the deliberate sanction of one of the ablest, most experienced and most distinguished engineers of the age. Nor was sanction given until after the most patient scrutiny, both of the plan itself, practically examined, and of all the published discussions and animadversions on the subject. Since that report was obtained, the operations of another year, wide and varied in their range, develop nothing but additional confirmation. The fifteen sections extending from Chicago river to the "Point of Oaks," eight miles, and lying through the low wet prairie periodically flooded by the Des Plaines river through Mud lake, have been completely defended against any possible danger from surface water; and are now, by means of those defenses, accessible and tenable at any season of the year. The same plan of drainage and defense is gradually progressing from the "Point of Oaks" to the Saganaskee swamp, and enough has been done to inspire the fullest confidence in the practicability and moderate cost of the work. Much less rock will be encountered than was once supposed, but the earth excavation will in some few instances cost a shade more than the estimates. The quantity of water to be pumped is not greater on an average than was anticipated; although there are several sections that will require stronger machinery for that purpose than the others. The same remarks will apply to the rock cuttings between the Saganaskee swamp and Lockport, all of which have been permanently defended, and many of them so far advanced as to exhibit to the bottom every variety of material and every difficulty of excavation.

Through Lockport and thence through Juliet, many improvements have been made through the line. Symmetry and strength have been added; the value of the water-power exclusively belonging to the State has been much increased; and every advantage that plans and locations could secure to the State has been scrupulously observed. The revenue from the sales of lots and water privileges in and between these flourishing towns must be ultimately very large, as will also be the case at the passage of the Du Page river, where a manufacturing place of no little importance must soon be required to meet the exigencies of the country.

The costly and exposed sections around the base of the Kankakee bluffs are in the hands of experienced contractors, who are known to have executed extensive and more difficult jobs on the St. Lawrence canal. The safety of the plan of construction is now generally conceded, and the price at which the work was taken was fair. From this point to Marseilles nothing has been let; thence to Ottawa the work is advancing steadily, and will be finished in good time.

The navigable feeder from the Fox river, commencing at Green's mills and falling into the main canal at the town of Ottawa, and also a lateral canal and basin extending to the Illinois river, authorized in March, 1837, have been located with due regard to the enhanced value of the property of the State. The entire feeder, about five miles long, and a considerable section of the side cut have been placed under contract and will probably be so far advanced in another year as to render available the large and valuable water-power thus to be introduced into the heart of the town. These judicious improvements, ordered at the last regular session of the Legislature, can not fail to advance the prosperity of Ottawa in a high degree. Strengthened and cultivated as her natural advantages now are, it is admitted by all intelligent observers that she must soon become an important manufacturing city, creating a vast amount of business for the canal, diffusing incalculable benefits through an extensive scope of country, and remunerating the State, by increased value of property, more than three-fold the amount of the additional expenditures. Several mill sites might now be profitably sold at Juliet, where they are much needed for general convenience, but the board have no authority

to sell or lease such privileges on any part of the line. The power is indispensably necessary, and should be conferred on the commissioners or some other agents at the present session of the General Assembly.

From Ottawa to the termination of the canal at the city of La Salle, the work, except the basin and steamboat channel, is progressing as rapidly as was expected. Several sections have been received, and many others will be ready for delivery early in the coming year. The channel and basin will be pushed with vigor on the opening of the next season, and, if labor can be commanded, they will be in time for the remainder of the third division, which it is believed may be brought into use in the spring of 1841.

The principal part of the aqueducts, locks, dams and culverts of the middle and lower divisions, have been undertaken by practical mechanics, skilled and experienced in their line of business, and, at the instance of Judge Wright and Mr. Gooding, a superintendent of established reputation has been employed by the board to keep a vigilant watch, and see that the laying of every stone is in accordance with the specifications of the contract. By this means uniform and permanent structures may be expected.

Good stone, conveniently situated and carefully tested, has been found in sufficient abundance, and water lime or Roman cement, of the most superior quality, lies in inexhaustible beds along the line from Lockport to the Little Vermilion river. An improved furnace for calcining and a steam mill for grinding the lime will soon be put in operation at Lockport by Messrs. Norton and Steele, a firm from Canada, who manufactured principally for the St. Lawrence canals, while under the control of Judge Wright. The commissioners have contracted with these gentlemen for a supply of the article at fifty cents a bushel, delivered at the respective structures, and subject to the inspection of the State agents—terms believed to be unusually favorable.

The fourth section of the canal law of 1837, requires the board of commissioners to cause a survey and estimates to be made, as soon as convenient, of the route of a canal diverging from the main trunk, through the Saganaskee swamp and Grassy lake, to intersect the Calumie river at the nearest practicable point, and to construct the proposed branch whenever the State of Indiana shall have undertaken a corresponding work connecting her system of internal improvements with the Illinois and Michigan canal. In compliance with this requisition, a party, under the direction of Mr. Burnett, was ordered to that duty as early as preparations could be made. The season being one of extraordinary wetness, examinations and estimates could not be as accurately made as it was desirable they should be. But the commissioners, accompanied by the chief engineer, continued to explore the route until they realized their anticipations of the facility and cheapness with which an excellent canal might be constructed, uniting at once great public convenience and utility with a profitable investment of capital. Completed at a cost of not more than three hundred thousand dollars, it will connect the Illinois and Michigan canal directly with Lake Erie and all the artificial navigation of Indiana and Ohio; and it is thought that the water-power together with the town which it will create on State property, will more than reimburse the outlay. For the particulars of the survey, see Mr. Burnett's report marked J. Major Lewis, one of the acting commissioners, and Mr. Williams, the chief engineer of the Indiana canals, have verbally expressed their opinions to this board, that Indiana would certainly accept the invitation of the State of Illinois, and meet her at the dividing line; but, as yet, no written communications have been interchanged. It is highly probable, however, that some step will be taken by Indiana, at the present session of the legislature, which may demand immediate action on the part of this State. It is therefore proper to inquire whether the existing laws confer the power on the board of commissioners to commence the prosecution of the work. It will be perceived that the fourth section of the amendatory act for the construction of the Illinois and Michigan canal, approved March 2, 1837, after authorizing a survey and estimates, using the following words: "The said work to be constructed whenever the State of Indiana shall undertake a corresponding work connecting her system of

internal improvements with the Illinois and Michigan canal." The work is ordered to be constructed, but the ways and means are not pointed out. No doubts are entertained that the power was intended to be conferred and that it was designed to appropriate the necessary means out of the canal fund; but the sixth section of the law of January 9, 1836, says: "The money borrowed, the premiums arising from the sale of any stock created, the proceeds of the canal lands and town lots, and all the moneys in any way arising from the contemplated canal, shall constitute the canal fund, and shall be used for canal purposes, and for no other whatever, until the said canal shall have been completed." The words, "for canal purposes," taken with the context, would seem to mean for the purpose of the Illinois and Michigan canal. If so, a more explicit appropriation should be made.

The enlargement of the natural basin at the confluence of the north and south branches of the Chicago river, authorized by the 7th section of the law of 1837, will be commenced sometime during the approaching summer unless a scarcity of labor should cause other work to be delayed by the commencement of that. The exchange of block number 14, the property of the State, for block number 7, belonging to the individuals, has not been effected; and it is the opinion of the commissioners that it will be decidedly to the interest of the canal fund to condemn block number 14 for removal, and sell 7, after the basin shall have been enlarged.

The three commissioners appointed by the circuit judge of the seventh judicial district to value private property required for the construction of the canal, have attended, at the instance of the board, on two occasions. At their first meeting all were present, but at the second only two appeared, when it was contended by counsel and sustained by the court, that the law made no provision for any number less than three to act. The death of one of them occurred soon afterwards and application being made by the claimant for the appointment of another, the judge decided that no power was anywhere vested for filling vacancies. These defects in the statute should be removed by amendment.

The agents for the protection of canal lands have been less successful than was reasonably expected. Depredations, though not so frequent as formerly, continued to be committed with shameful impunity, arising in some degree from the difficulties of obtaining such evidence as will satisfy a jury. Some few judgments have been obtained at considerable cost, but chiefly against irresponsible persons. The commissioners continue of opinion, however, that the agency has been beneficial far beyond its expense. Firm and vigilant men may yet arrest the lawless and dishonest practice of plundering lands devoted to so great an object, and this belief finds strength in the good effects which were produced by the activity and fearlessness of Col. William Weatherford during his short period of service. It is nevertheless due to a large and respectable portion of the inhabitants of that section of country to say that public sentiment has undergone and is undergoing a wholesome change in respect to the propriety of enforcing the laws against all trespassers. If the agents do their duty, they will find many influential citizens who are ready to aid and support them. Several assurances have repeatedly been made to the board by persons in whom every confidence can be reposed.

The act passed in July, 1837, providing conditionally for the sale of canal lands to the amount of four hundred thousand dollars, made it the duty of the commissioners to select the lands intended to be sold—to subdivide them into lots of not less than forty nor more than eighty acres—and to value them in reference to many considerations. To comply with these injunctions, it became necessary to employ agents of suitable qualifications for the collection of proper information, Mr. Richard G. Murphy, of Perry county, and Col. John Flemming, of Shelby, were invited to undertake the laborious task; and it affords the board much pleasure to be able to say that as far as these gentlemen progressed, they performed the duties assigned them with unremitting industry and much skill. Attended by Mr. Preston, an excellent surveyor, they examined minutely and in regular order, each section of canal land, establishing its corners and taking tabular notes of the quality of soil—the quantity and description of timber, the size and character of streams—the amount of improvements—and many other items of information highly

useful for present and future purposes. A correct knowledge of these things was deemed indispensable to the board in order not only to select the lots to be offered, and graduate their value generally, but to guard against being overreached in selling an extraordinary tract of land for an ordinary price. It is to be regretted that the party was dispersed by sickness before the object was accomplished; but the work will be resumed and finished as early as it can be economically done; and if the pecuniary condition of the people will justify it, the lands authorized to be sold, or a part of them, will be brought into market in June or July.

The sixth section of the act of March 2nd, 1837, empowers the board of commissioners to sell such parts of the canal lands in the township in which Chicago is situated, and alternate lots in La Salle and other towns along the canal route, as might be necessary to produce the sum of one million of dollars. Under this authority, and since the last session of the Legislature, a few alternate lots have been sold in Lockport, in Ottawa, and in La Salle, but more with a view of founding the towns and preventing individual property from superceding that of the State, than for purposes of present revenue. The financial embarrassment of the Union for nearly the last two years will satisfactorily account for no other property being sold. The sales at the places enumerated, amounting in gross to \$35,400, were effected at liberal prices considering the times, and almost exclusively to actual settlers who are making substantial improvements. The treasurer's and secretary's reports contain specific accounts of sales.

This rapid view of the condition of the canal and the affairs connected with it, taken alone, would probably be thought insufficient; but in conjunction with the appended reports from the treasurer and secretary, and from the principal, and the resident, and the examining engineers, it will be found to embrace as much as could be said on the subject without repeating information which others had detailed with perspicuity.

It appears from the estimates of the chief engineer, as will be seen by an examination of his report, that according to the contracts made, adding a full allowance for the light sections not under contract, the sum of \$7,621,442.57 will cover, with very little variation, every expense for a convenient, substantial and elegant canal, such as it ought to be for commercial economy, durability and State character. The original estimate of the same engineer, exclusive of the additions at Ottawa and the enlargement of the basin in Chicago, was \$8,654,337.51, being \$1,032,894.94 more than will be required to complete the work.

Upon a result so important to the people, and, under all the circumstances, so gratifying to the board, the commissioners can not refrain from tendering to your Excellency their warmest congratulations.

It is the deliberate opinion of the board that the canal may be finished in four years, if there be no delay on account of funds. The money already consumed amounts to \$1,432,445.43, of which \$986,355.85 were disbursed in the last year; and but for the well known awful visitation of Providence, this sum would have risen to \$1,200,000. The operations for the year 1839 will require an additional appropriation of a million and a half of dollars, and those of 1840, two millions. A small part of these sums may possibly be derived from sales and collections, but to rely on that source beyond the interest to be paid on loans, would be a questionable policy.

In conclusion, the commissioners reiterate the opinion, expressed in the first annual report to the Governor, that "if these lands and town lots be very gradually and cautiously brought into market, reserving the chief part until the canal shall have been completed, and all its advantages clearly understood, there is more than enough to build it on the present capacious and permanent plan. But, on the contrary, if sales be forced and all the lands be

disposed of before their true value be known, there can not fail to be a deficit of several millions of dollars. Many tracts of land that would not bring more than five or six dollars per acre if sold immediately, may be worth, a few years hence, from twenty to one hundred dollars. Innumerable instances of the kind might be adduced, some of them in the vicinity of the canal."

All of which is respectfully submitted,

W. F. THORNTON,
Late President.

JACOB FRY,
Acting Commissioner.

CANAL OFFICE, LOCKPORT, December 10, 1838.

To the Board of Commissioners of the Illinois and Michigan Canal.

GENTLEMEN: In pursuance of the duties assigned me, I have the honor to submit the following report:

Since my last annual report to your board, (a copy of which accompanies this), the work upon the canal has progressed with as much rapidity as could reasonably have been expected, considering the obstacles presented. Notwithstanding the unfavorable weather of last winter, the high water of last spring, and the sickness of last summer, and fall, there has been a large amount of work done, and this amount would probably have been increased at least \$300,000 but for the sickness. The weather during the summer and fall has been remarkably favorable for canal operations, and particularly for protecting and preparing portions of work upon the Summit division for further progress.

The part of the line from the south branch of Chicago river to summit or the Point of Oaks, is now placed in such a situation as to insure its safety from the high water caused by the overflowing of the Des Plaines river.

This has hitherto been the cause of much trouble and delay, and occasioned, for a considerable length of time, an entire suspension of the work. A small part of the deep earth cutting in the valley of the Des Plaines, between Summit and the Saganaskee, has also been protected, so that the work may be successfully prosecuted during the seasons of high water. Upon this part of the canal, the contractors have spent most of the past season in making preparations for a more vigorous prosecution of the excavation, such as building shanties, providing the necessary fixtures, grubbing and clearing, etc.; so that the amount of estimates upon work done is very trifling, compared with that which remains. It should be observed, too, that several of the sections have been re-let since the regular meeting in June last, and the contractors have not yet had time to make full preparations.

The location of the canal at the Saganaskee swamp and the plan of constructing it have materially changed since my first estimate was made, and a very decided advantage gained in the expense, in the symmetry of the line, and in the increased value of State property. The canal as now located occupies as much of the channel of the river as can be made available upon a straight line. A new channel for the river will be opened upon the west side of a low island or peninsula which extends the whole length of sections 42, 43 and 44, and will occupy nearly the same place where the main channel of the river appears once to have been. An embankment will be made connected with the spoil-bank on the west side of the canal at the lower end of section number 41, (which is just above the Sag, and near the present channel of the river) crossing the river from that point to the island, and running thence across the island to a bayou, which will form a part of the new channel; thence parallel with the canal and about twenty-two chains from it, upon the west side of said island to a point near the lower end of it; and thence across to the canal upon section number 45, where it will be connected with the protection so as to exclude the waters of the river. Parallel with and near the embankment upon the west side of the island, the artificial channel will be made so as to unite the bayou above mentioned with one that extends up from the lower end of the island. This channel will be opened 200 feet wide, and all the earth excavation from it deposited upon the island

side. It is believed that the depth of excavation sufficient only to remove the roots will be all that will be necessary; for the whole river being forced into the channel by the embankment above described, will cause a current sufficiently strong in time of floods to deepen and enlarge it to the requisite dimensions. There is a large, deep basin, or expansion of the river below the channel, of sufficient capacity to hold all the deposit that can be washed into it.

That part of the canal embraced in sections number 42, 43 and 44, the only sections upon the Summit division, except two, which are not now under contract, has been very properly withheld from contract since the above described change was made. The only work that can be done upon it to any advantage, previous to the completion of the sections from number 44 to the running out of the level, consists of earth excavation under water, which it is believed can only be done, with economy, by a dredging machine. Such a machine your board has very properly determined to build, under the direction of an efficient agent of the State, who should also superintend its operation when completed, and it should be in readiness as early next season as practicable. With this machine, all the work on the three above mentioned sections, except a small amount of rock excavation and walling, can probably be performed by the time that the sections below will be finished. These once done, the water can be drawn down so that the rock excavation (which occurs only upon section 44) and walling, can be performed with little difficulty or delay.

When the canal at this point is completed upon the present plan, a quantity of State land, amounting to about 270 acres, will be reclaimed, which is, at present, entirely valueless. The whole of the impassable marsh that now presents so forbidding an appearance will be made dry land.

The junction of the canal from Calumet river with the main line, being made at this point upon the reclaimed State land, which will make it one of the most valuable town sites upon the line of the canal or in the State. The importance of the point at this junction will be appreciated when it is understood that the "lateral canal" is the last link in the chain of canals of nearly twelve hundred miles in length which will, by this, be connected with the improvements of our own State. All these canals are believed to be in progress, and some of them are known to be nearly completed, and the whole chain will probably be completed in three or four years. To those who have not watched the progress of improvements in neighboring states, this statement may appear almost incredible, and the following list is, therefore, given to show that there is no exaggeration.

	Miles.
Length of Erie and Michigan canal, including both the branch to Michigan City and to the Illinois State line (all in Indiana)	198
Wabash and Erie canal in Indiana and Ohio	315
Central canal, Indiana	310
Cross cut canal, Indiana	43
Miami canal, Ohio	205
White water canal, Indiana, (length of Richmond branch estimated) ...	90
Canal from Cincinnati to Harrison, on the White Water canal, (length estimated)	30
Total	1,191

There are several navigable feeders omitted which would probably increase the length thirty or forty miles.

The canals above enumerated are intersected at various points by railroads and other improvements, which will add much to their usefulness, and materially increase the importance of a connection with them.

From section number 44 to Lockport (a sub-division that embraces all the heavy rock excavation) the line has been permanently protected from the river floods, with the exception of sections 45, 46, 47 and 48, a part of which only requires protection, the rest being above the highest floods.

When this work was first placed under contract, it was supposed that all the protection against high water that would be required for the canal after its completion would be made by the contractors for their own security during the construction, or that, if any further defense were required, it could be made with greater economy after the canal was finished. But the unusual floods of last year rendered it evident that a strong and permanent defense must be made to prevent the influx of the water into the canal, and the serious delay occasioned to the work by the want of such a defense, and the probable recurrence of such a delay, satisfactorily proved the expediency of at once making a protection or defense at the expense of the State, which should be sufficient for all present and future purposes. This protection consists of two parallel stone walls, three feet apart, raised one foot above high water mark, and a wall of well puddled clay between them, extending down to the firm rock beneath, and as high as the top of the parallel walls.

The Sag and Big run ditch extending from section number 45 to Big run, commenced last year, has been completed. The object for which this is designed was explained in my last annual report.

The cost of the protection and ditch forms no inconsiderable item of expense, but could not be dispensed with, without causing much delay during the construction, and materially detracting from the value of the canal after its completion.

Much labor during the season past has been spent upon the above mentioned work, but as the former is nearly, and the latter entirely completed, the whole force that can, in the future, be brought to bear upon the work, may be directed exclusively to the excavation of the canal.

The work upon the Summit division during the past season has generally been well applied, so that the sections that have been worked upon to any considerable extent are now, with but few exceptions, in a good condition for future operations. Portions of many of the sections upon this division have been worked to bottom, and several of them will probably be completed in the course of next year.

An improvement has been made in the plan of constructing sections number 66, 67 and 68, by building dry walls in front of the embankment, which will somewhat increase the cost, but add greatly to the value of State property and the durability of the canal, and diminish the expense of repairs.

In connection with number 68, which passes through the town of Lockport, and is made 120 feet in width, a hydraulic basin has been estimated, which is to be constructed in such a manner that the mills or manufactories which are to be operated by the water-power created here will be built upon and draw their water from three sides of it—the other side being next the canal and only separated from it by the towing path, a street and a tier of warehouse lots. This basin will be connected with the canal in such a manner that boats or vessels can readily pass into it and load or unload at the mills and warehouses.

The water will be used here for the descent of the first two locks, (which are of ten feet lift each) though the second lock is located about a mile below the first. A tail race can be made from the mills upon ground of such a level as to require but light rock cutting, except for a short distance, and the water carried in below the second lock.

The value of the water power created here and at other points upon the canal, by drawing a supply of water directly from Lake Michigan, can be fully appreciated after a season of such severe drought as the past. The Des Plaines river and many other considerable streams of the country have been nearly dried up, and probably three-fourths of the water-mills throughout a large portion of the United States have been standing still for the last three months. But had this canal been completed, there would have been during the past season an unusual supply of water, as the surface of the lake has been 9 feet 4 inches above canal bottom, or 3 feet 4 inches higher than was originally calculated upon for the supply.

The line from Lockport to Dresden, a short distance below the Kankakee bluffs, was prepared for letting last spring, and offered for contract the 5th of

last June. All the work offered was let, and at such prices, generally, as were satisfactory. Some of the lowest priced work, however, has since been abandoned and relet.

In revising the line for letting, the canal was made very nearly straight for the whole distance from Lockport to Juliet. This location varied considerably from the first survey upon which the estimate was originally made, and the locks are quite differently distributed. The first two locks are, as before mentioned, about a mile apart—the first in the lower part of the town of Lockport, and the second, or lock number 2, just below fraction run—both upon canal land. Locks number 3 and 4 are located upon canal land about $2\frac{1}{4}$ miles below Lockport. The lockage is 20 feet, and the same amount of water-power will be created here as at Lockport.

Lock number 4 brings the canal to the level formed by the pool of dam number 1. A short distance below said lock, the line runs into the channel of the DesPlaines river, which will here be turned to the right, and the whole of the water forced into the channel upon the west side of Norman's island.

The rock excavation in the bed of the river, from the point where the canal enters it to the upper end of said island, averages about two and a half feet in depth; but when the river is turned the excavation will be attended with no particular difficulty. The excavation continues across the island running out at the lower end of it, where the towing path crosses the river, and is thence continued down the right bank to the guard lock at dam number 2, where the independent canal again commences. From this point to the termination of the canal, the towing path is upon the left or south side.

From Norman's island to dam number 1, which is located upon canal land, just above the town of Juliet, two strong walls with embankments between them, will be constructed upon the east side to confine the water in the pool of the dam. It is proposed to raise these walls and embankments 7 feet above the comb of the dam, to be perfectly secure from the highest floods. From dam number 1, to dam number 2, a similar defence will be required, but of a much less height.

Both dams will be made of good cut-stone masonry laid in hydraulic cement. Dam number one will be connected with lock number five, which will be upon the west or towing path side. Here also a large amount of water power will be created which, at this point, will be particularly valuable and confer great additional value upon State property.

From Juliet to the DuPage the revised line varies considerably from the former surveys. This variation was made in order to keep up the level between five and six feet higher than formerly, so as to cross the Du Page by an aqueduct. This will somewhat increase the cost but make a much better and safer canal. The increased cost will be principally upon the three or four sections immediately below Juliet and in the aqueduct across the Du Page, which will cost more than the original plan of crossing this stream in the pool of a dam. The plan was changed after witnessing the floods of the last two years, and being fully convinced that more would be gained by it in safety than would be lost in expense, if, indeed, the increased expense is not more than compensated by the additional water power that will be given upon the State land at the Du Page. This State land will form a town site of no inconsiderable importance, being beautifully situated in the heart of a fine country, at a considerable distance from any town that could possibly rival it. The lockage immediately crossing the Du Page will be fifteen and a half feet, divided into two locks, numbers six and seven, and it will be necessary to draw about 4,500 cubic feet of water per minute past these two locks (exclusive of the lockage water), to supply the canal to Marseilles.

A feeder will be taken into the canal from the Du Page, about three miles above the crossing. The last season has shown this stream to be one of the most permanent in the State, and it can be introduced as a feeder at a very moderate expense.

The length of the feeder will be twenty chains, and an embankment is already nearly completed extending from the head of the feeder up the river 27 chains, and connecting with high ground upon the river bank. This em-

bankment, together with that which will necessarily be formed in the construction of the feeder, will exclude the flood waters of the Du Page from a depression through which they formerly flowed into Rock creek. This defense not only secures the safety of the canal, but prevents a considerable quantity of excellent land from being overflowed.

From the Du Page to Dresden the line has been but slightly changed since the first survey, but the quantity of slope wall to protect the canal at the Kankakee bluffs has been considerably increased to render the canal doubly secure at this exposed point.

The cost of the canal around the bluffs at the present contract prices will not vary materially in the aggregate from the original estimate, and the contractors are men of responsibility and much experience in similar kinds of work, so that its completion at present prices is beyond a doubt.

It will be seen that in many particulars the canal from Lockport to Dresden is very much improved from the original design. In addition to other improvements between five and six miles of the canal below Lockport will have walling either upon one or both sides, which will effectually prevent the washing of the banks or any serious danger from breaches. This mode of constructing the canal has been adopted every where that stone of a suitable quality could be conveniently obtained in the excavation, and on portions of the distance above mentioned stone is quarried for the express purpose.

These improvements in the mode of construction and others upon various parts of the line, which will in some degree increase the cost, have been the more readily introduced in consequence of an important saving in expense upon other parts of the canal, which it was shown would reduce the aggregate cost considerably below the original estimate.

The line from Dresden to Marseilles has not yet been prepared for letting, but this should be done as early next spring as practicable and the whole of it placed under contract. The estimate for this part of the canal will be the same as in my first annual report.

From Marseilles to the western termination of the canal, but particularly below Ottawa, a large portion of the earth work has been finished. Only six sections upon the main line and one upon the Fox river feeder have been entirely finished and accepted, but ten or twelve sections more are nearly done and might have been completed in October had not sickness caused a serious interruption in canal operations.

The work upon the Fox river feeder is so far advanced that it may be completed, without difficulty, next season. The dam at the head of it is finished, except a small amount of masonry to raise the abutments to requisite height, and the guard lock will be done next spring.

Several changes in the original plan of constructing portions of the western division have been made with a view to greater permanency and utility, or to benefit State property. The change in the canal at Ottawa, for the purpose of benefiting the State property at that place, increased the cost of construction about \$12,000, but will enhance the value of the property to a much greater amount.

At Pecumsagan creek, a much more expensive and better artificial channel has been formed than was at first deemed necessary. An extraordinary flood, June last, destroyed a considerable amount of work already done, and showed the necessity of increasing the expenditure to give additional security to the aqueduct to be built across said channel.

There having been some injury sustained upon the heavy embankments from sections 191 to 195, in consequence of strong winds during a long continuance of high water, it was thought expedient to protect the banks that were most exposed by a slope wall. Accordingly the whole section number 194, and parts of sections 193 and 195, have been thus protected, and the whole will probably be made secure before the spring floods.

The width of the steamboat channel has been increased, for a distance of 600 feet below the basin, to 160 feet on the bottom, or 60 feet more than it was first estimated. A similar enlargement has also been made for a short distance above its entrance into the Illinois river.

Wherever an improvement upon the original plan, increasing the cost over the original estimates, has suggested itself during the progress of the work, the facts have been communicated to your board, and I have had the satisfaction to find that it has been deemed more important to increase the permanency, utility and symmetry of the canal, and the ultimate value of State property, than to keep the cost in every instance within the original estimates. It is well known that when those estimates were made there had not been sufficient time given to mature plans or determine in all cases, the nature of the material that would be met with in the execution of the work. It was my intention to make my estimate high enough in the aggregate, but it was not expected that in all its details it would exactly correspond with the actual cost.

Such full developments have now been made upon nearly all the work which has been placed under contract, that its character is pretty well ascertained.

The contracts made the past year have generally been made with experienced contractors, after they had satisfied themselves of the true value of the work by actual observation of similar work then in progress, and had had the benefit of their own or other contractors' experience upon the same canal for the two years previous. These contracts have been made, in most cases, at prices below the original estimates, for the same quality of work, and with very few exceptions, will undoubtedly be executed at the prices, and afford a fair profit. If relettings become necessary, the work generally will be relet, without an increase of prices. This opinion has been confirmed by observation and the relettings that have already taken place.

The character of the deep rock cutting about which such a diversity of opinion prevailed at the commencement, is now as clearly understood as that of the light earth work. All the sections have been commenced and considerable portions of many of them excavated to bottom, showing every variety of rock that can be supposed to occur in what still remains. These developments have reduced the cost of this portion of the canal to as much certainty as it is possible to arrive at before its completion. Heavy contracts have been taken by responsible contractors, for less than the original estimates, upon quarried rock, and those contracts, (since the first season) have, in all cases, been for embodied rock, whether stratified or solid. Were the whole of the rock excavation upon the Summit division to be offered for contract again at this time, it could unquestionably, be let to contractors of the highest responsibility for considerably less than the amount of the present contracts.

The principal structures of masonry upon the canal have nearly all been placed under contract the past season, and a commencement made by quarrying and cutting stone. Twelve out of fifteen lift-locks upon the canal have been let; also two stone dams and a guard-lock at Juliet, the masonry in the abutments and piers of the Fox river aqueduct, and two culverts—one of sixteen and the other of eighteen feet chord. The masonry in the Fox river aqueduct was awarded or let in the fall of 1837, but no commencement having been made, it was relet in June last.

The locks will cost less and the aqueduct more than the original estimate. The quality of work in the Fox river aqueduct has been changed from hammer-dressed to cut stone, and in the locks it remains the same as was originally intended.

Since the work was let, quarries have been opened along the line and near it, and stone of a very good quality has been obtained. Water lime is also found in inexhaustible quantities at Lockport, and in several places upon the western division of the canal; and as a contract has been made with a gentleman of undoubted responsibility for the manufacture and delivery of the lime at the places where it is to be used, the cost may be calculated with certainty. All the contracts for masonry, except for the Little Vermilion and Pecumsagan aqueducts, and the guard lock and dam abutments at the head of the Fox river feeder, were made for so much, exclusive of the water lime, which was to be furnished by the State. This was done, first, because when the contracts were made it was not known where it would be obtained, nor at what cost.

The materials that will be obtained for the masonry throughout the whole extent of the canal can be had more conveniently and of much better quality than was anticipated at the commencement; but in consequence of the delay caused by the sickness of the past season, it will probably require two seasons more to complete all the masonry which is under contract. By placing the remainder of the work of every description under contract next spring, or early next summer, the canal may be completed in three years, from the deep cut to the western termination, unless the seasons should prove more than usually unfavorable. To accomplish this and proceed at the same time with a force upon the Summit division sufficient to complete it one year later, will require a great additional number of laborers. These might easily have been obtained had the country through which the line of canal passes proved as healthy the past as the two preceding years. But unfortunately for the canal it has been otherwise. There has been much sickness upon this canal as well as almost every other public work in the West. This may probably be attributed to the long-continued and intense heat of the summer, and the severity of the drought. But from whatever cause it may have proceeded, it was unusual, and it will not likely occur again. The two preceding years, since the commencement of the canal, had been remarkably healthy, and there is no reason to doubt that succeeding seasons may prove equally favorable.

When the sickly season commenced in July last the force upon the canal was rapidly accumulating, but the sickness in August and September not only discouraged the laborers abroad from coming here (for exaggerated reports of the unhealthiness of the country were everywhere circulated), but caused many that were here to leave the country altogether, or to engage on other public works of the State. Since these discouraging circumstances occurred, several of the contractors have exerted themselves to introduce men upon their work at their own expense, and have expended considerable sums of money to effect this object. Their exertions have been attended with some success, but it is feared that they will not derive that advantage from the introduction of laborers upon their work after they have been once obtained. It is respectfully suggested whether the State's interests would not be materially benefited by making a liberal expenditure of money in obtaining laborers from a distance for the canal, either directly through an agent of your board, or by coöperating with contractors. Much effort will, at all events, be necessary on the part of contractors, and the friends of the canal generally, to correct the misrepresentations that have been made in relation to the sickness, to show the liberal wages uniformly paid upon this canal, and the advantages that this country presents over almost every other for the investment of their earnings.

The number of laborers upon the canal and connected immediately with canal operations during the past year, as nearly as can be ascertained from the returns made upon each sub-division at the close of each quarter, has been as follows, viz:

First quarter ending February 28th.....	790
Second quarter ending May 31st.....	1,755
Third quarter ending August 31st.....	2,193
Fourth quarter ending November 30th.....	2,114

From the number of men now engaged it is very evident that several hundred have left the canal since last summer. There are many, however, who still continue upon the line, that have not yet recovered their strength sufficiently to labor, and therefore are not included.

The amount of work done upon the canal during the past year is as follows, viz:

First quarter ending February 28th.....	\$109,417 62
Second quarter ending May 31st.....	167,128 67
Third quarter ending August 31st.....	409,374 33
Fourth quarter ending November 30th.....	227,741 93
Total in 1838.....	\$913,662 55
Total in 1837.....	346,899 43
Total in 1836.....	35,744 83

Total amount of work done.....\$1,296,306 81

This statement will show the progressive increase of labor from the commencement up to this time. It will be seen that but a small amount of labor was performed last winter and spring, in consequence of the unprotected state of the work, and that the amount during the last quarter, instead of being a great increase upon the summer quarter, as in 1837, shows a vast decrease, in consequence of the cause already explained.

The amount of work let upon the canal at the public letting in June last, was as follows, viz:

Aggregate length of line upon the Summit division exclusive of relettings, three miles and 28 chains.

Total amount at estimates.....	\$369,771 58
Total amount at contract prices.....	366,199 96

Total amount less than estimates.....\$3,571 62

Aggregate length of line let upon the middle division, twenty-one miles.

Total amount (including structures) at estimates.....	\$1,145,329 93
Total amount at contract prices.....	1,091,722 12

Less than estimates.....\$53,607 81

(NOTE.—The number of laborers on the first of August was probably 3,200.)

Structures upon the western division:

Total amount at estimates.....	\$215,705 92
Total amount at contract prices.....	194,549 84

Less than estimates.....\$21,156 08

Aggregate length of line now under contract, including all of which has been let, seventy-seven miles and forty-three chains.

Total amount, at present contract prices including every description of work which is under contract, \$5,871,740.37.

Aggregate length of line not under contract, twenty-four miles and four chains.

Total amount of work to be let, including all the work of every description which is not now under contract, \$1,251,103.15.

Total amount of work under contract.....	\$5,871,740 37
Total amount of work not under contract.....	1,251,103 15
Add 7 per cent for superintendence and contingencies.....	498,599 05

Total cost.....	\$7,621,442 57
Original estimate.....	8,654,337 51

Difference.....\$1,032,894 94

There has been a constant effort on the part of some of the pretended friends of the canal, to make it appear that the estimate submitted in my first annual report was far too low. It has been stated, even during the past

summer, in some of the newspapers of this State, (and consequently considered as an established fact abroad), that the friends of the canal now generally admit that the canal will cost much more than this estimate. But this is far from being the fact. None of the friends of the canal, who can have any just pretensions to a knowledge of the value or cost of the work, ever made such an admission. On the contrary, when it was discovered that a much greater quantity of rock excavation had been estimated upon the summit division than would be found, the canal was known to have been over-estimated, notwithstanding considerable additional improvements were made upon other parts of the line in consequence of this saving.

In submitting an estimate of the cost of the canal as it now is, I am not governed by my own judgment alone, or that of other engineers. A very large portion of the whole work, and all that there was ever supposed to be of a doubtful character, is now under contract, and much of it in the hands of men of great experience, sound judgment, and undoubted responsibility. They have generally taken the work at prices a shade below the estimates. All the work which is not under contract is estimated at prices at least as high as existing contracts, and no doubt is entertained that the work can be done as low as the estimates. Every item of work has been embraced which it is now supposed can possibly be necessary, in order, as nearly as practicable, to show the entire cost of the canal; but it is not pretended that anything more than the probable cost can be shown until the whole work is fully completed. A variety of circumstances may occur during the progress of the work of this magnitude, which can not now be anticipated, that may, in some degree, either increase or diminish the cost, but can not cause a material variation from the present estimate.

The accompanying reports of Messrs. Talcott, Jerome and Burnett, resident engineers, will give a satisfactory account of the progress and situation of the work upon their respective divisions. The tabular statements annexed to each will show the names of the contractors, the quantities and amounts of the various items of work performed at the prices allowed, the sections which are and those which are not under contract, and the aggregate cost of each section, embracing all the items whether at contract or estimated prices.

All of which is respectfully submitted.

W. M. GOODING,

Chief Engineer Illinois and Michigan Canal.

CANAL OFFICE, LOCKPORT, December, 1837.

To the Board of Commissioners of the Illinois and Michigan Canal.

GENTLEMEN:—Agreeably to your request, I have collected such facts in relation to the canal as my duty has led me particularly to observe, which I have the honor to submit in the following report:

Although the amount of work done upon the canal during the year past has not equalled the expectations of many of its friends, yet a great number of sections, embracing a vast amount of work, have been successfully commenced, and several of them on the western division nearly completed. The number of laborers has continued gradually to increase, and there are now as many upon the line as the contractors are at present prepared to receive. The want of labor that was so much felt last year and the beginning of the year 1837, and which for a time so much retarded the progress of the work, it is presumed will not again exist. It is now generally known abroad that the country through which the line of canal passes is very healthy; that several thousand laborers may here find constant employment for a number of years, and that no country in the world affords such advantages for the investment of the earnings of this class of men.

The number of laborers engaged upon the canal on the first of December last was not far from 350, and the force was not much augmented till the opening of spring navigation. There are now actually employed upon the canal, and in the various operations immediately connected with canal con-

structions, about 1,700 men. This number might have been greatly exceeded had not many of the contractors been negligent in providing tools and accommodations for the number of men requisite to progress with their work as rapidly as their contracts required. This delay was, for a short time, in some degree excusable, in consequence of the hard times and scarcity of labor; but where sections have been suffered to remain a whole season without being commenced, or where a commencement seems to have been made barely for show, and no reasonable assurance has been given of the ultimate prosecution of the work from the progress already made, or from visible preparations commensurate with the magnitude of the job, there can be no doubt that the interests of the State will require a reletting as soon as efficient contractors with the necessary means can be found who will take the work at fair prices.

On this as on other canals, many contractors have sought for and obtained more work than they can accomplish—some by overrating their means or ability, and some with the intention of selling out—they receiving the profits, and others performing the operations. Where such has been the case, and the contracts have been clearly forfeited, your board may very properly effect a division of the work by reletting such sections, as the original contractor can not or will not prosecute, and allowing him to retain such an amount of work only as he can conveniently manage.

The amount of work performed during the year has been considerably less than it would have been but for the unfavorable weather that has so much of the time prevailed. The last winter was one of unusual rigor, and the wet weather during the spring, summer and fall, without a precedent since the first settlement of the country. The streams for a great part of the year have been very high, particularly the Des Plaines river; but less interruption to the execution of the work has resulted from this cause than might have been anticipated from the unprotected state of most of the sections; and it has been clearly shown that a defence can be made at a moderate expense, that will render the whole work perfectly secure during the highest floods. The high water in the Illinois river has been the cause of serious delay in the excavation of the steamboat basin and channel at the termination, and a large force will be requisite upon the work as soon as a favorable season for operations shall be presented.

The amount of work done upon the canal from December 1, 1836, to December 1, 1837, according to the monthly estimates, is as follows, viz:

Upon the summit division.....	\$180,536 97
Upon the western division.....	166,362 46
Total	\$346,899 43

Far the most important item of work embraced in the above amount, is the rock excavation on the Summit division. Considerable progress has also been made in the deep earth excavation between the Chicago river and the Point of Oaks, but there has been so much water upon the surface since the work was let that the side ditch, which is to be formed on the south side of the canal without the spoil-bank, has not yet been finished; nor but a small part of the bank on the north side, which is to guard against the water that flows from the Des Plaines river in time of floods, and which is to be formed of the earth excavated from a ditch within the prism of canal.

On section number 1, several chains in length have been finished, and on other sections on this part of the line, portions have been sunk to bottom. On most of the sections of deep rock cutting which have been in progress during the year, small portions are now at bottom, so that the quality of both the rock and earth excavation through the deep cut is well now understood. Enough has been done to fully demonstrate the character of the work, and show the ease with which it may be executed. Contractors, therefore, who have recently taken work, have done so with a better knowledge of the work than could previously be obtained.

The estimate of a part of the Summit division, contained in my report of last year, has fortunately proved much too high. A large portion of the excavation between the Point of Oaks and the mouth of Sagonsaskee swamp was supposed, from the examinations made, to be rock, and estimated as such; but test-pits or shafts have this year been sunk, which show that the excavation will consist principally of clay and gravel, with a small portion of detached rock. Since this error in relation to the quality of excavation was discovered, the work has been re-estimated, and much of it let at prices below the estimates. This error in my last year's estimate, which originated in consequence of a want of time to make the proper examinations, will considerably diminish the cost of the Summit division.

During the past year, the greater part of the middle division has been carefully revised from Lockport to Juliet, (and a survey made of the route through Juliet) under the direction of Mr. Talcott, and the remainder under the direction of Lieut. Burnett, resident engineer, assisted by Messrs. Preston and Ryan. Some slight changes in the route of this portion of the canal have been made, though it remains essentially the same. The principal alterations are between Lockport and Juliet and the Aux Sable and Nettle creek. This division can now be readily prepared for letting, as very few other changes will be necessary.

A change was made in the line of canal opposite to and for a short distance below Ottawa, on the western division, agreeable to instructions received from your board, in order to enhance State property at that place. The change was one unquestionably benefiting the State interests, but considerably increasing the cost of the canal. Work to the amount of \$1,449.63 had been done on sections 168 and 169 upon the old line. These sections are now nearly completed.

From sections 188 to 195, inclusive, a large quantity of heavy embankment has been made, and it is believed that the most of these sections (except the structures and the steamboat basin which is on section 195) may be finished next year.

The cost of some sections on this division, and probably on each of the others, will be greater than was anticipated before the quality of the work had been minutely examined. Rock, or a different kind of excavation from that which was estimated when the location was first made, sometimes occurs, and will, of course, increase the expense; but, on the other hand, many sections will cost much less than the first estimate.

It was supposed, when my report was made to your board last year, that several causes might operate to reduce the cost below the estimates then made. One cause suggested that a more general attendance of efficient contractors, and consequently more competition; another, a reduction in the price of labor. Both of these causes have this season fortunately operated in favor of the canal. The two public lettings (on the 20th of May and 13th of November) were well attended by contractors of known skill and experience, and the work has been generally let below the estimates—partly, no doubt, because the character of the work was better understood, but partly because the price of labor has been so much reduced. The wages generally, for the year past, have been twenty dollars per month—six dollars per month less than the year preceding.

The work that has been placed under contract the past year is as follows, viz:

Aggregate length of lettings on the Summit division, exclusive of re-lettings, eighteen miles and twenty-five chains.

The amount at estimates.....	\$2,011,332 03
The amount at contract prices.....	1,925,364 33

Less than estimates.....	\$85,967 70
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Aggregate length of letting on the western division, exclusive of the Fox river feeder, twelve miles and sixty chains.

The amount at estimates.....	\$186,200 36
The amount at contract prices.....	187,143 18

More than estimates.....	\$942 82
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Length of the Fox river feeder, by the route finally adopted, four miles and thirty-five chains—all let.

The amount at estimates, including dam and guard lock.....	\$77,451 74
The amount at contract prices.....	74,700 37

Less than estimates.....	\$2,751 37
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Aggregate length of line let during the year, including the Fox river feeder, thirty-five miles and forty-six chains.

The amount at estimates.....	\$2,274,984 13
The amount at contract prices.....	2,187,207 88

Less than estimates.....	\$87,776 25
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Aggregate length of line now under contract including the Fox river feeder and the lettings of the year 1836, fifty-two miles and three chains.

The amount of all work let at contract prices.....	\$3,244,234 97
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All the Summit division, except twelve sections, and nearly all of the western division below Marseilles, are under contract. Several sections have already been relet, but generally as low as the original contract prices; yet it would obviously be an error to calculate on the completion of the whole work without a liberal allowance for relettings. Even were the prices in all cases high enough to complete the work with judicious management, still the work will not all be judiciously managed; and though it may be frequently relet at fair prices, the State will sometimes have, at last, to pay more than its actual value, in order to have it executed in proper time.

During the past year ditches have been laid out, placed under contract, and partly executed from the Point of Oaks to Chicago river, and from the mouth of Saganaskee swamp to Big run; the object of which is to receive and carry off the water which must otherwise drain into the canal, or accumulate behind the spoil-banks. By the aid of these ditches, the water (except what falls behind the spoil-banks) may be effectually prevented from conveying deposit into the canal, and also from interrupting the progress of the work during the construction.

At the mouth of the Saganaskee swamp, the canal has been so located as to reclaim a portion of a canal section (section number 15) which will be made very valuable, if the junction of the "lateral canal" with the main line be made at this point. The cost of the canal will not be materially changed by the slight change which has here been made in the location, though the character of the work will be different. The quantity of rock excavation will be much diminished, but a large amount of embankment required.

Two parallel embankments, one upon each side of the canal, must be made the whole length of sections 42, 43, 44 and 45, or more than a mile and a half, and the excavation of the canal made between them. The water between the banks must necessarily be thrown out by machinery, which will have to be kept constantly in operation during the construction. It is important that the contractors should use their exertions to introduce the most economical method of pumping the water from their works, as this at present forms no inconsiderable item of expense. This expense, will be comparatively trifling when the proper defense is made, and more perfect machinery used.

Messrs. Greenwood and Bishop (contractors for sections 13, 14 and 15) have erected a steam engine for pumping, which is more than adequate to discharge the water from their work under the most unfavorable circumstances; and it is believed that this power will be far the most economical where the quantity of water to be raised is great.

No mechanical work upon the canal has yet been let, except the masonry in the abutments and piers of the Fox river, Pecumsagan and Vermillion aqueducts, and the dam and guard-lock at the head of the Fox river feeder. It will probably be expedient to let all the structures between Marseilles and the termination early next spring, so that this part of the line which is to be supplied with water from the Fox river feeder may be ready for navigation in the autumn of 1839. This may easily be accomplished if the contractors will use proper exertions; and, if they do not, it may be proper to either let the work, or finish it by State agents. The completion of this part of the canal will be important not only with regard to navigation, but also on account of the extensive hydraulic power that may be immediately brought into use, and which will add vastly to the value of the State property at Ottawa and LaSalle.

A portion of the Middle division should probably also be let in the spring. The line from Lockport to the foot of the Kankakee bluffs, which will include a great number of structures, and the most of the heavy work that now remains to be let, should be first placed under contract. This part of the line is through a beautiful section of country, which would furnish a large quantity of supplies; and the work is of a kind to invite the attention of the most skillful contractors and insure its completion at fair prices.

There is now but little doubt that laborers enough can be procured for the work that is let, and that which it is proposed to place under contract next year. The force upon the canal during the past year, and particularly during the summer and autumn, has been rapidly accumulating; and laborers are still coming in in considerable numbers, notwithstanding the late navigation is closed. The gradual accumulation of the force upon the canal will be shown by the estimates for each quarter of the past year, which are as follows, viz:

First quarter ending 28th February.....	\$ 7,902.
Second quarter ending 31st May.....	55,647.
Third quarter ending 31st August.....	112,044.
Fourth quarter ending 30th November.....	171,305.
Total.....	\$346,899.

The entire cost of the Illinois and Michigan canal will probably fall considerably short of my estimate of last year; yet experience has shown that the actual cost of any great public work can not be determined with certainty until its completion. The fluctuation in the price of labor and supplies, and a variety of other causes, render it impossible to estimate the exact cost of doing work at any future period; but when many experienced contractors readily contract for work at prices as low or lower than the estimates, it may reasonably be inferred that the estimates are generally high enough, and that no attempt has been made to underrate the cost of the canal.

Early in the year, and previous to the revision of the middle division, the locating party under the direction of Lieut. Burnett proceeded to make a survey of the lateral canal (agreeably to the law authorizing the same) connecting the Illinois and Michigan canal with the Calumet river, and through this river, with the Michigan and Erie canal of Indiana.

His very satisfactory report, which I take great pleasure in communicating to your board, will show with what care and ability he has executed his duty, and the praise that he and the young gentlemen who have assisted him so justly deserve.

This canal must be regarded as a valuable auxiliary to the Illinois and Michigan canal, and an important link in the chain of internal navigation in the western states. By this direct communication with the head of Lake Erie will be obtained by a canal, not exceeding 300 miles in length, (composed of the lateral or "Illinois and Indiana canal," the "Michigan and Erie" and part of the "Wabash and Erie canals,") which will be particularly useful in such seasons of the year as the lake navigation is uncertain or hazardous. It will connect with a chain of canals in the States of Indiana and Ohio, which passes through the valleys of the Wabash, the White river, the Maumee, the

Miami, and connects with the Ohio river at Evansville and Cincinnati. Although this vast chain of canals is not in the general direction of the commerce of this State, yet it is believed that this communication will ultimately give a great accession of business to the Illinois and Michigan canal, by the cheap and safe intercourse established with the various parts of the country thus connected.

The cost of this lateral canal will be trifling compared with the importance of the object to be obtained by its construction.

The accompanying report, maps and profiles of Lieutenant Burnett will convey all the information that your board may require in relation to the route, cost and plan of said canal. The engineers employed by your board have generally displayed a laudable zeal in the fulfilment of their duties. Mr. Talcott, the resident engineer on the Summit division, assisted by Messrs. Hanchett and Gooding, and Mr. Jerome, the resident engineer on the western division, assisted by Messrs. Robinson, O. S. Jerome and Killaly, have performed their duties in the most prompt and satisfactory manner.

The recent visit of Judge Wright, an engineer, whose high reputation for judgment, skill and experience, has been well earned by a long course of useful service in his profession, has given great satisfaction to the friends of the Illinois and Michigan canal; and it is believed that his approbation of the present plan and location will do much to reconcile conflicting opinions concerning it. During his visit he made an examination of the whole line of canal, and his attention was called to every portion of it where the least difference of opinion could prevail in relation to the location and plan of construction. He took much pains to make himself thoroughly acquainted with every fact necessary to lead to a just conclusion, and though his visit was but short, his opinions were not formed without due deliberation, and may therefore be relied upon with great confidence. All of which is respectfully submitted.

WM. GOODING,

Chief Engineer Illinois and Michigan canal.

LOCKPORT, December 10, 1838.

To William Gooding, Esq., Chief Engineer.

SIR:—In compliance with your request, I herewith present the following report upon the Summit division of the Illinois and Michigan canal.

For the purpose of rendering the following remarks more perspicuous, I have considered the line in three sub-divisions, agreeable to the general topography of the country and the progress of the work: the first division extending from the south of Chicago river to the Point of Oaks, or Dee Plaines river; the second from the Point of Oaks to, and including the Saganskee valley; and the third from said valley to Lockport.

Upon resuming charge of the line in March, 1837, I found nearly every section, one to fifteen, inclusive, was the second time offered for contract in May, 1837. The unfavorable appearance of the work (nearly one-half of which was overflowed by the river) prevented much competition, and the proposals received were considered much above the real value of the work. Sections one, two and three, only, were awarded. The commissioners then determined to defend the work by a continuous embankment on the north side, formed by excavation from the prism of the canal, and on the south by a ditch without the spoil-bank, to receive the drainage of the country which is discharged into the southernmost branch of Chicago river. A contract was accordingly made for this purpose; soon after which contracts were made for the construction of the main work, at the engineer's estimate, subject to the contract for the defense. Owing to inefficiency in the contractor, the work of defense was abandoned at an early stage, and subsequently awarded to the contractors for the main work, according to their respective sections.

The season was far advanced before much progress had been made, and the imperfect protection proved no defense against the unusual high water in December, 1837. Nearly every section that had been commenced was over-

flowed, and the work generally suspended during the winter. It was resumed early in the spring, and throughout the past season has been prosecuted with considerable energy. The plan of defense is now completed, and what has hitherto been considered one of the greatest obstacles to the construction of this part of the line effectually overcome. From the general character of the excavation (which consists principally of a very compact blue clay, occasionally intermixed with fine gravel), no great difficulty can be experienced in keeping the work clear of water. It is now in a favorable condition for the coming winter; during which it can be advantageously prosecuted.

At the time of making your first annual report, the work on that part of the line included in the second sub-division (embracing sections 16 to 44 inclusive) was supposed to consist principally of rock excavation. The circumstances which induced that opinion were the regular rock formation which appears on the west side of the Des Plaines river, opposite the Point of Oak and forms its bed for some distance above and below this point. It was therefore, natural to suppose the same geological construction would be found on the east side of the river, and time not permitting the usual examination by sinking shafts, it was considered in the estimate as stratified lime rock. Examinations were made during the summer and autumn of 1837, which show that no regular rock formation exists on this part of the line, until we reach the south side of the Saganaskee valley.

The excavation will consist chiefly of clay and gravel, a small portion of detached rock, with an occasional vein of sand—the strata varying frequently in compactness and relative position.

That part of the line opposite to the Saganaskee valley was examined with reference to adopting the present channel and changing the river to what appears to have been its former channel on the west side of a peninsular island. These examinations were made at a high stage of water, which rendered it difficult to make them with the desirable precision. The data presented, however, were considered sufficient to determine the location by avoiding the river, yet approaching it somewhat nearer than the original line and improving its general direction. Upon this location and some slight changes in the line above, this division, together with all the sections upon the Summit division not then under contract, was offered for letting in November, 1837. The principal part of the sections were awarded; but in consequence of their not being commenced within the prescribed time, several were declared abandoned, and some of them subsequently relet at the engineer's estimate.

The winter of 1837-8 afforded a favorable opportunity for making a more critical estimate of the river opposite to the Saganaskee valley. Its bed in many places was found to be from six to eighteen inches below the bottom of the canal and of the necessary width; but its meanders precluded the possibility of obtaining a symmetrical line which would embrace the full benefit of the channel for any considerable distance. The margin of the channel was particularly examined, and found to consist entirely of a vegetable deposit from twelve to sixteen feet deep, and approaching so near a fluid state that two men could with ease force a sounding rod through it to the depth.

For the purpose of making a just comparison, that part of the line, located in November, which passes across the bayou or expansion of the river along its margin, was also examined with much care. Upon these examinations the following comparative estimates were prepared:

Line located in Nov., length 127.08 chains estimated.....	\$452,815 0
Line through river, length 126 chains estimate.....	324,204 0

Showing a difference in favor of the river line of.....	\$128,611 0
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Upon these estimates and an examination of the ground, the commissioner adopted a line passing through the river varying slightly from that upon which the examinations were made. This plan involved a change in the line above this point, much improving its general direction—the line being not direct from the center of section 36 to the center of section 45, or 3 miles

54.18 chains between the points of deflection. The change will somewhat increase the quantity of grubbing and excavation on sections 38 and 39, and slightly diminish the excavation on sections 40 and 41; but the difference is trifling compared with the general result. It may here be proper to remark that the item for forming a new channel for the river, and an embankment to confine and direct its waters, was based upon somewhat hypothetical data. The whole surface being then covered with a heavy mass of ice rendered it impracticable to make a critical estimate. I have recently examined the ground minutely, and prepared an estimate upon the plan of making a channel 200 feet wide, and an embankment raised three feet above the highest water, at the prices at which the work is contracted to be performed.

The length of the line between the extremes of sections 41 and 45 being less than that embraced in the comparative estimates above mentioned, I have revised the estimates accordingly, which will be found in the general tabular statement of the cost of the several sections. In work of this character, it is difficult to anticipate all the contingencies that may occur in the course of construction, and the most careful estimate may be exceeded in the aggregate cost. The quantity of earth and rock excavation, as well as the prices at which they are estimated, is considered liberal; it is, therefore, confidently believed that this part of the line can be constructed at a cost not varying materially from the estimate.

Between the Point of Oaks and the Saganaskee valley, there will be required four receiving reservoirs for the drainage of the country. These will consist of a pit formed in the rear of the spoil-bank, about thirty feet square, excavated to two feet below top-water line of canal, with the sides and bottom paved, and communicating with the canal by a narrow passage. It is believed that these will receive the deposit usually carried into a canal by the drainage water—forming bars expensive to remove, and frequently proving a serious embarrassment in the navigation.

The cost of these, together with the grading of the towpath, paved waterways to receive the falling water into the canal without injury to the banks, and all work not under contract is included in the aggregate cost of the sections.

The sections not previously under contract throughout the Summit division, were let in June last. Many of them have been commenced, and generally they are believed to be in the hands of efficient men.

The third sub-division, embracing sections 45 to 48 inclusive, comprises the deep rock excavation. Each of these sections have been commenced, and several of them excavated to bottom from twelve to thirty-five rods in length. During the season of 1837, this part of the work progressed with an increasing vigor until the unusual rise of the river in December, which overflowed several of the jobs and suspended further operations until the ensuing spring. Under these circumstances it became apparent that it would be imprudent to rely upon the protection which the contractors might think proper to make, though bound, in self-defense, to make it efficient. It was therefore deemed advisable by the commissioners to construct a permanent and continuous defense against the waters of the river and the drainage of the country at the expense of the State. This may now be considered as complete from section 49 to 60 inclusive—the work below 60 not being subject to overflow from the river. The protections on sections 47 and 48 is not far advanced, but, from their relative position, no danger can accrue to the work below. There can no longer be any apprehension of delay or interruption to the uniform progress of the work from this cause. The falling water, and what filters through the fissures of the rock is readily discharged by the ordinary pump worked by horse power. As the work progresses, however, and a larger surface is to be drained, a resort to steam power will probably be found the best economy, though not indispensably necessary. Several contractors are making arrangements to procure steam engines during the winter.

The sickness of the past season has materially checked the progress of the work, and though the general health of the country is restored, the work has not yet assumed its former vigor.

About 150 men have recently been brought from Canada, and two of the contractors are now absent for the purpose of securing others. Agents are employed for this object, and from the efforts they are now making, a considerable reinforcement may be expected in the course of the winter. An accession of at least 3,000 men should be made to this division early next spring.

The following accounts of the estimates for each quarter of the years 1837-8, will show the comparative progress of the work.

1837.

First quarter ending February 28.....	\$ 3,360 00
Second quarter ending May 31.....	35,693 57
Third quarter ending August 31.....	44,420 94
Fourth quarter ending November 30.....	95,062 46
Total.....	\$170,536 97

1838.

First quarter ending February 28.....	\$ 58,095 52
Second quarter ending May 31.....	96,651 81
Third quarter ending August 31.....	231,567 13
Fourth quarter ending November 30.....	142,187 58
Total.....	\$528,502 04

When the amount of work performed during the two past years is contrasted with the expectations then formed by many of its friends, some may feel disappointed; yet when it is considered that the season of 1837 was unusually wet; that nearly every section that had been commenced was overflowed by the river, and the work necessarily suspended until the ensuing spring; the sickness that has prevailed through the past season; that the work is now generally secure against the surface water; and that cranes and railroads are now successfully employed for removing the rock on nearly every section—it must be admitted that much has been done under the circumstances, and that the work presents a truly flattering prospect for its rapid progress in future.

(For tabular statement showing work done and prices allowed to November 30, 1838, etc., see Session Reports 1838-1839, House Report January 1, 1839, page 38.)

Observation and developments of the general character of the work during its progress, thus far, confirm the opinion that the contract prices are adequate to the construction of the work.

On the rock cutting, it will be observed that in some cases considerable discrepancy exists between the present and the original estimates. This arises in some cases from a misconception of the relative quantity of earth and rock at the time of making the first estimate. This can not be correctly ascertained until the superincumbent earth is removed and the surface of the rock fairly exposed. On many of the sections this has been done, and the quantities carefully estimated; on others, such data has been obtained, by a partial removal of the earth, so as to render the present estimates a very close approximation to the true amount. Some of the sections have been let at prices higher than the first estimate, and some relinquished and subsequently let above the first prices. The most striking difference exists in sections 66, 67 and 68. This is in consequence of a change from the original plan of construction. It was at first designed to form only a single bank for the towing path, and suffer the water to expand over the low ground on the opposite side, which at present is rendered a marsh by the overflow of Big run. By the present plan, the canal is to be confined within regular banks faced with rock taken from the excavation; and the waters of Big run confined by a guard bank extending from the bluffs to the head of section 66, where, in connection with the surplus water of the canal, and the accumulated drainage of the country from section 46 to this point, it is received into the canal and discharged directly opposite by a sluice or water-way 500 feet in length.

This arrangement adds much to the permanence and symmetry of the canal, and reclaims about 300 acres of valuable land, 200 of which belong to the State.

The structures embraced in the estimate consist of a towing path bridge over the south branch of the Chicago river, three road bridges over the canal, a bridge over the Des Plaines river at the Sag, a stop-gate on section 74, a water-way and tow-path bridge on section 66, a wooden culvert on section 67, and the hydraulic basin on section 68.

Believing that it will frequently be found advantageous to the commerce of the country for the lake vessels to navigate the canal as far as Lockport, turning or pivot bridges have been estimated.

The formation of a basin at the forks of the Chicago river being considered as part of the general plan of the canal, is also embraced in the present estimate.

Respectfully submitted by

Your obedient servant,

EDWARD B. TALCOTT,

Resident Engineer.

To William Gooding, Esq., Engineer in Chief on the Illinois and Michigan Canal.

SIR:—In pursuance of your directions, I proceeded with my party early last spring, to revise, locate, and prepare for letting, that portion of the middle division of the Illinois and Michigan canal embraced between Lockport and Dresden, a distance of twenty-one miles—sub-divided into forty sections, of forty-two chains each. From Lockport to Juliet, a distance of three miles and sixty-six chains, the line is entirely changed from the original survey. At the beginning of this division is located lock number 1, of ten feet lift, with a guard of two and a half feet, to meet the contingency arising from the fluctuation of Lake Michigan. One mile below, is located lock number 2, of ten feet lift; and about one mile and a half above Juliet, locks number 3 and 4, of ten feet lift each. For three-fourths of a mile above, and nearly through Juliet, the canal occupies the bed of the Des Plaines river and is of increased width. The banks for this distance are to be raised some feet above the ordinary height, and to be protected from the wash of the floods by substantial walls on the inner sides.

The river is to be raised to the requisite height by two stone dams at Juliet.

With the upper dam is connected lock number 5, of ten feet lift, with a guard of four feet, making a valuable water power on canal land. With the lower dam is connected a guard-lock; at which point the canal leaves the river.

Owing to the height of the spring floods, it became apparent that the line from Juliet to and over the DuPage river would be benefited by being located on a higher level than the former, of some five or six feet. This location varies the line considerably from the original, although, taking the whole distance, the cost of construction is not materially changed; and it is believed that a better location has been obtained. By this means the DuPage river is passed by an aqueduct sufficiently elevated above the highest floods to secure its permanency.

About three miles above the aqueduct, the DuPage river is to be received into the canal by a side cut of twenty chains in length, connected with a dam across said river. There is to be a guard bank extending from the dam up the east side of the river twenty-six chains. This bank is deemed necessary to prevent serious injury which would otherwise accrue to the canal at this point, from the high floods. Immediately below the aqueduct, are located locks number 6 and 7, with an aggregate lift of fifteen and a half feet. From thence to Dresden, a distance of five miles, the line occupies nearly the ground of the original location. The greater portion of this distance, the canal passes at the foot of the Kankakee bluffs; some part of the way in the edge of the Des Plaines and Illinois rivers—the towing path bank to be pro-

tected from the great floods and extensive ice jams formed by the uniting of the waters of the Des Plaines and Kankakee rivers, by a strong wall on the river side.

Especial reference was had in locating the above twenty-one miles of canal, in such manner as would best afford those wishing to make an examination of the work, every facility to do so with accuracy; the nature of the excavation being expressed by shafts sunk at suitable distances—a large stake properly registered planted at the beginning of each section, with intermediate stakes once in sixty-six feet, with the corresponding levels recorded on the same.

The plans, maps, and profiles, together with an estimate of the cost of the above work, were prepared and submitted prior to the letting on the fifth of June last; at which time this portion of the canal was put under contract. The work generally was commenced as per requirement, and prosecuted the brief time intervening between that period and the beginning of the excessive sickness which prevailed through this section of the country, during several months of the past season—with very considerable vigor, giving flattering hopes that this portion of the work would be completed in the time specified.

From the first of August to about the first of November, the severity of the sickness caused an almost entire cessation of the progress of the work, notwithstanding most of the contractors were endeavoring to advance it as fast as circumstances would admit. In a few instances contracts have been abandoned and relet; but at present there seems to be generally, among the contractors, a disposition manifested to make all suitable progress with the work. Some sections are already nearly completed, as a reference to the tabular statement will show. The number of men employed upon this division of the canal, on the first of September last, was 145, and the work done was \$48,468.42. The number of men employed on the 30th of November is 607, and the amount of work done, is \$37,857.25; making the total amount of work now done on this division to be \$86,325.67.

The remainder of this division, a distance of about seventeen miles, has not been resurveyed; but a tabular statement of your former report showing the cost of construction of that portion of the canal, is annexed.

The annexed tabular statement is designed more fully to show the amount of the different denominations of work done, the amount of work to be done, and the total amount when done.

All which is respectfully submitted,

With great respect, your obedient servant,

WILLIAM JEROME,
Resident Engineer.

OTTAWA, LaSalle Co., Ill.,
December 1, 1838.

To William Gooding, Esq., Chief Engineer Illinois and Michigan Canal.

SIR:—In compliance with your request, I have the honor to present to you the following report upon the progress of the construction of the western division of the Illinois and Michigan canal, with such other information as you have desired.

I was directed to take the charge of the division, as resident engineer, early in March, 1838. It was then generally located, and all the work now under contract, excepting some of the structures, section 167, and the side cut or "lateral canal" at Ottawa, had been let, and was in progress of construction.

The western division had been divided into three sub-divisions, each under the superintendence of an assistant engineer, which, on account of the peculiar character of the work developed, and for convenience, will be separately considered.

The first sub-division was made to commence at section 141, or the eastern extremity of the division, and to extend to the Fox river aqueduct, and section 167, at the crossing of Fox river inclusive.

The second, from section 168 to 179, one-half mile below the western extremity of Buffalo rock. The Fox river feeder, intended to supply this division with water from the foot of the locks at or near Marseilles to the termination of the canal on the Illinois river, has been annexed to this sub-division, as also the "lateral canal" at Ottawa; and the third sub-division embraces all that portion of the canal from section 180 to its termination, about three-fourths of a mile below the town site of LaSalle. The length of the main canal embraced in this division, 29.32 miles—of the Fox river feeder, 4.93, exclusive of the "lateral canal" at Ottawa, proposed to open a communication with the Illinois river at this place—presenting almost all the varieties of the work that can occur in canal constructions.

Having received no directions to locate definitely that portion of the sub-division which lies above Marseilles and includes the two lift locks at that place, which location would not probably have materially altered the original estimates, that portion of this division is carried into the present estimate at the amount contained in your report of 1836. The topography of the ground between Marseilles and Ottawa over which the canal passes is level, with slight undulations, and was generally placed under contract in the month of June, 1837. It was then supposed to consist principally of common earth excavation, and contracted for at correspondent prices. Since then, as the work progressed, other materials have been met with presenting the varieties of cemented clay, soft slate, and slate rock, and other silicious and argillaceous compounds in all the stages of formation from earth to rock. These items have been classified and your estimate affixed to them, as material for which the contractors had no contract price; and it is believed that, unless the character of the work should further change from what has been discovered, which is not probable in its present advanced stage, they will prove sufficient for its completion. This variety of material is found generally to exist in strata at various distances from the surface of the earth commencing with the softer materials first, until, on some of the sections, a firm slate or sound rock is met with.

The increased expense on account of these materials will be found to exist principally upon sections 155, 159, 160, 161, 162, 163, 164 and 165. This portion of the western division has not progressed as rapidly as others, owing principally to the irresponsibility of many of the original contractors, who have since left or entirely neglected their work, enabling the board of commissioners to place the work in better hands. There is an important increase in the expense of section 167, which includes the Fox river aqueduct, owing principally to the necessity of advanced prices upon the masonry of that structure. It was first let in November, 1837, and re-let in June last at such prices and to such men as it is believed are fully competent to the completion of the masonry of this important structure. A wooden superstructure is embraced in the plan, estimates of which are given. A model of the plan will be presented for the consideration of the commissioners at an early day. Upon this sub-division there has been one section completed. The stone culverts upon sections 156 and 158 have been let, and were commenced under favorable auspices. Quarries of a species of sand stone were opened that have thus far stood the test of very severe weather, and some of this stone, with other materials, has been delivered.

The second sub-division, extending from Ottawa, passes over the high bottom of the Illinois valley until it reaches the western extremity of section 173, whence it follows the general outline of the base rock bluffs to section 176, inclusive, where it enters a depression that it follows to section 179, which consists principally of high embankments at the crossing of the outlet of said depression, and is the termination of this sub-division.

The estimates of this sub-division will be found to approach very near to yours of 1836, and the principal difference exhibiting itself in those of sections 172 and 175, where, in consequence of the convenient distance of the quarry from which stone is obtained for the Fox river aqueduct, the locks embodied with them have been let at lower prices than the original estimates. This and other items diminish the estimated expense of these sections, as may be seen by reference to the accompanying estimate made from contract prices.

The Fox river feeder, with its dam and guard-lock, is advancing rapidly to completion. The line of the feeder upon which former estimates were predicted crossed a ridge of land that connected a promontory or mound upon the bank of Fox river with the main bluffs of the Fox and Illinois valleys. The adoption of this line would have occasioned the necessity of very deep cutting through the ridge into a difficult material; and the former resident was directed by you to make examinations around the mound following the bank of the Fox river; which examinations resulted in the definite location of that line. This change has materially lessened the former estimates of the feeder at the contract prices. More rock and cemented clay have been found upon some of the sections than was anticipated; which, together with the length of the feeder, occasioned by a curve to form the junction with the main canal upon State land to enhance its value, have contributed to lessen the amount of the favorable difference between former estimates and those of the work as now located. One section has been completed. The Fox river dam is completed, except the gravel filling required above it, which will be deposited in the course of next month. The abutment and guard-lock were not carried much above the present surface of the water. The severe sickness that we have experienced during the last season delayed operations until it was too late in the season to lay hydraulic masonry. It will be secured from injury during the winter, as far as possible, by covering it with the heavy stone prepared for its completion. The "lateral canal" has been commenced and a sufficient quantity of the rock uncovered by the earth excavation, to enable us to estimate its probable expense with approximate accuracy. The plan of the basin to be attached to it, not having been fully determined on by the commissioners, not the mode of applying the water power to be obtained through the Fox river feeder, its estimate can not be relied on as very accurate. The whole estimates of this work are embraced with those of the division, and it is connected with it by the direction of the commissioners.

The third subdivision, extending from section 180 to the Illinois river, embraces a great variety of work. It is carried from section 167, upon the high bottom of the Illinois valley near the bluffs, to section 188, whence it follows the outline of the base of the bluffs, crossing the Pecumsagan, piercing Camp rock, a remarkable projection from the main bluff; thence to the crossing of the Little Vermilion; then through La Salle, when it leaves the bluff and enters upon the river bottom, where the former canal commissioners directed the construction of an extensive basin for the purpose of the canal and river navigation. The basin is made to communicate with the river through the same bottom land, by a steamboat channel. The change in the character of the work as it has progressed upon this subdivision, the injuries that it received during the extraordinary freshets of last spring, and the necessity of guarding against such an occurrence in future, by the construction of extensive protection walls, will account for the increase upon these sections of the western division. For example, upon sections 183, 184, 185, 186 and 187, rock was met with to a much greater extent than was anticipated. Upon sections 188 and 189 there was a large item allowed for sinkage of bank into the marsh, and an expensive alteration required for symmetry of line upon section 190, mainly owing to the increased expense of the Pecumsagan channel. The wash of the spring freshet occasioned a deposit in the channel as excavated last year of near 8,000 cubic yards and produced the necessity of constructing a permanent stone dam at the upper end of this artificial channel to prevent such accidents in future. This dam is now nearly completed, and when the slope wall connected with it shall have been made, it is believed the work will be secure. Upon section 190 the increase is somewhat owing to the sinkage of the heavy embankment west of Camp rock and the necessity of protection for said embankment. The expense that sections 192, 193 and 194 will incur can not be closely estimated at present, as it is believed that the bank or bluff will continue to slide into the prism, which slide must be removed to retain the proper width of canal. Upon sections 196 and 197 a material increase is exhibited, owing to a modification of the original plan made with the view to accommodate it to the plan of the town site of La Salle, and to give increased basin room by an increased width of a portion of the steamboat channel. This work has not progressed as was desired by the commissioners

and indeed is far behind the other sections of this division when its expensive character is considered. Three sections have been completed upon this subdivision.

The number of men employed upon this division, as near as could be ascertained from keeping an average account of the force upon the work for each month during the year 1838, is as follows:

For quarter ending 1st March, 23 teams and 350 men.

For quarter ending 1st June, 35 teams and 595 men.

For quarter ending 1st September, 55 teams and 960 men.

For quarter ending 1st December, 39 teams and 445 men.

It will be observed that there is a great variation in the force exhibited, which, so far as refers to the third and fourth quarters, is attributable mainly to the severe sickness of the past season, which still confines one hundred at least to their shanties.

The migratory character of the men employed is also a main cause for this variation, as many of them go to the south at the setting in of winter, to return in the spring. There is a great deficiency of stone cutters and masons upon the line. One hundred and fifty could find employment. Some endeavors have been made by the men upon the line to raise funds to build a hospital for the sick, and those who may be injured by accidents at the quarries, and others. Funds have been obtained to a considerable amount, and those interested desire to make its location upon State property at LaSalle, should the Legislature encourage them by giving the canal commissioners the power to grant or lease to them, land for this laudable purpose. When the character of the men it is intended to benefit is considered, and their utility in the construction of public works upon which there is so much to be expended in the vicinity of the point they would select for this institution, and the fact they will incur the main expense themselves, I am induced to believe that the Legislature will be willing to grant them all the aid in their power.

Upon this division, you will have observed, that there are but seven sections or about three miles and one-half, completed. It should be stated, however, that ten sections more are so nearly completed that an average expense of \$1,000 or \$10,000 for the whole, would complete them. But for the sickness of the past season ten miles of the canal would have been finished. Under all the difficulties of obtaining men, responsible contractors, and the severe sickness that has visited us, the work may be said to have made such progress as to insure its completion in about two years, with adequate funds.

It would be desirable, however, to complete it as far as Marseilles by the spring of 1840, that the portion of the western division fed by the Fox river feeder, and upon which the work has so far advanced to completion, should be as soon as possible in successful operation.

Yours, etc.,

WARD B. BURNETT,

Resident Engineer Western Division Illinois and Michigan Canal.

CHICAGO, October 23, 1837.

To the Board of Commissioners of the Illinois and Michigan Canal.

GENTLEMEN:—Having been appointed by your honorable board, under the 3rd section of the law of the State of Illinois, of March 2, 1837, "to survey and examine the route of the canal as now established, with a view of ascertaining whether there is a sufficient quantity of water, within the legitimate authority of the State of Illinois to use, to supply a canal of the same size and dimensions as the one now contemplated to be constructed upon the Summit level of said line of canal;" I have, in pursuance of the duties here pointed out, passed over the whole line of canal from Lake Michigan to Peru, examined all the plans and profiles, and received explanations and descriptions of every part of the work as projected and marked out, as well as all those parts now in progress of working under contract; and I think I may

say I have now possessed myself of a full knowledge of the details of the work, as designed by your chief engineer, in all its localities and bearings upon the very important question of water, upon which I am required to act.

It appears by act of the Legislature above referred to, that "a supply of water from sources within the legitimate authority of the State of Illinois," was to govern all actions upon this matter, and that your board had early directed Fox river to be more fully examined than had heretofore been done.

From an examination of the various canal documents of the last session of the Legislature, it seems that the question stands as follows:

Shall the feeding water be taken from Lake Michigan by a deep cut? or, shall the summit be raised ten feet above the lake, and fed from streams to be brought into it? It has been supposed, and no doubt correctly, that only three streams of water can be brought on the Summit level: First, the Des Plaines river; second, the Calumet river; third, the Fox river.

The Des Plaines was not in a proper situation to gauge, as there had been copious rains; I therefore take the former measurements of the United States engineers, as stated in the reports of the canal committee, at 54,800 cubic feet per hour.

By calculation it is found that, if twelve boats pass per hour, the lockage water to lock up and down ten feet will be 475,200 feet per hour. If we then add for leakage at the locks (a small item) and for the evaporation, we ought not to say less than 500,000 cubic feet of water per hour will be required, when boats are passing as fast as they can be let through (or twelve per hour.) It is true that, if boats passing each way were to meet so as to pass a boat up with the same water which passed one down, then only half the above amount of lockage water should be estimated for the twelve boats per hour, although, I believe twelve boats per hour may be passed each way, if the locks are well attended, and are in perfect order for filling and discharging the water rapidly.

These premises being admitted, we have to look for 445,200 cubic feet of water per hour more than the Des Plaines gives us at low water.

The Calumet takes its source in the State of Indiana, and by a bend passes into this State, and its present entrance into Lake Michigan is within the State. It is, however, well known that its former entrance into the lake was in Indiana, and that it often has a discharge of its waters at the latter place in a particular stage of the waters of the lake. It is found by examination that the waters of Calumet must be raised by a dam near the mouth of Stoney creek (or Rock creek) about six or seven feet, in order to feed a canal; and if used for feeding with a copious supply of water, there should be a descent of at least two inches in each mile. This would increase the height of the dam to nine feet nearly above the present surface of water.

The effect of such a dam would be to make back-water, for many miles into the State of Indiana; and when we look at all these facts, it is an undeniable truth that the waters of the Calumet are not "legitimate waters of the State of Illinois." To get feeding waters for a canal on a high level, we must therefore look to Fox river. Before my arrival in this State, your board had very judiciously and properly directed Capt. Burnett, with his party, to examine the country between Fox river and the Des Plaines, beginning at the point on Fox river near Elgin, where former examinations had ended, and extend north to the line of the State.

Capt. Burnett's report on this survey is now herewith annexed, together with a sketch of the topography of the country, which gives a very satisfactory account of what resources of water can be obtained from Fox river.

The next feasible plan of obtaining water from Fox river is from a point in Pitaska lake, six or eight miles below the State line; and thence by a cutting designated by a red line on the map, to let the waters of Fox river into Mill creek, a branch of the Des Plaines; and from thence let them follow the bed of Mill creek and Des Plaines for forty or fifty miles before they arrive at the canal where they can be received into it.

By the plan proposed by Capt. Burnett (and which I fully approve) a dam is to be erected across Fox river to raise its waters two feet only, (as that is all the descent in the river from the State line to the proposed dam) a cutting, rising from nothing to 53½ feet, is then to be made for 12½ miles.

This cutting appears by Capt. Burnett's report to be fair, and without rock. The amount of excavation for a cut of sixteen feet on the bottom, and slopes two to one, with the water four or five feet deep (and it then would be a doubtful question whether it would pass through the quantity required) with the proposed descent of three inches per mile, admitting that it would discharge the quantity required, the cost would be thus:

3,176,520 cubic yards, at 30 cents.....	\$952,956 00
Dam across Fox river (on bad bottom).....	20,000 00
Contingencies, engineering, etc. 5 per cent (say).....	45,647 00
	<hr/>
	\$1,018,603 00

We have here an outlay of more than one million of dollars. Capt. Burnett estimated the rise of water in Fox river, above its lowest state, at two feet, and by measurement he found the stream gave 25,000 cubic feet per minute. If we take half of this quantity as its minimum, at the lowest water, we allow all that it will give, and perhaps more, 12,500x60=750,000 per hour. As this water has to run, probably fifty miles, in the marshy bed of the Des Plaines and Mill creek, where it is very sluggish, and will be several days in reaching the canal through Mill pond, etc., it is not too much to say that we might lose one-fourth of it by evaporation in a severe drought and hot sun.

In this calculation I have supposed the whole of Fox river in its lowest state to be brought through. Now, we can not expect that we shall have a perfectly tight dam; we shall lose much there; and as we have only 750,000—187,500=562,500, added to 54,800 equal to 617,300 cubic feet of water from both these rivers, and we want certainly 500,000 feet; and upon the most favorable calculation, we have only the 617,300 to rely upon.

It is true this quantity might be increased considerably by making reservoirs of several little lakes at the head of Mill creek.

If we admit that an ample supply can be obtained from this source, we ought, before adopting the plan, to look at the consequence of taking the waters of Fox river, and what would be the effect of throwing so much water into the bed of the Des Plaines. Would it not prevent the several large tracts of low (very low) prairie land from being drained and brought under cultivation? If I have been correctly informed, this would be the effect; and this is of very great moment, not only in preventing this land from being cultivated, but endangering the health of the people in the surrounding country.

The great objection to this immediate section of country is, that the lands do not drain freely; and for a permanent work, like the Illinois and Michigan canal, all the plans should be adopted, in reason, to make every part of the land more valuable by the drainage which the plan and the construction of the canal may give. The Illinois and Michigan canal, as now projected and under construction may truly be considered as one of the greatest and most important, in its consequences, of any work of any age or nation. In looking over this connection between the lakes and the Mississippi, it is no doubt superior in its advantages to any other which can ever be formed. It is the shortest artificial work, with the least lockage. The climate, soil, and the capability of productions of the country which will be benefited by the construction of this work, will certainly equal, if they do not exceed, any other part of the United States; and when I view it in this light, I think it justly merits to be executed upon the best and most permanent plan, and will justify, by its revenue, any outlay which may be put upon it in reason.

Taking a view of the whole ground, and looking at the probable cost of the deep cutting, of the low level, and the length of time it will take to accomplish it, and the time the country will lose the benefit; looking, also, at the great good to the country, and the pecuniary advantage to the State and

the canal, by the creation of water power at Lockport, and Juliet, I have no doubt upon my mind that the present plan of cutting down the Summit, so as to draw feeding water from Lake Michigan, ought to be continued, in preference to any other which I can suggest.

In my remarks I have not entered into calculation to show the many expenses and losses which would result from raising the level ten feet—such as the extra lock-keeper, annual repair of locks, loss to the country and State by not having water power—the advantages of vessels of large size reaching Lockport before unlading or lading—these and many other considerations having a bearing upon this question; and I might say would admit the case to be stated by putting down the expense of the low level, and then deducting the additional value given by water power to the State property at Lockport and Juliet, and the drainage of the State land otherwise, on one side—and on the other, the cost of the high level, with two locks, the cost of the attendance (brought into capital), the cost of introducing Fox river, and other contingencies, such as damages for the injury done to lands along the Des Plaines; and I fully believe the balance would be in favor of drawing the feeder water from Lake Michigan. In these remarks and opinions, I believe I have fully complied with the act directing the appointment. I shall, however, in another communication, comply with your wishes in regard to the details of the work, in its location, and the various points of difficulty in construction, and make full remarks upon every point.

Respectfully submitted by

Your obedient servant,

BENJ. WRIGHT,
Civil Engineer.

CHICAGO, ILL., October 20, 1837.

To B. Wright, Esq., Civil Engineer.

SIR:—In compliance with a law passed by the Legislature of Illinois and approved March, 1837, I have been instructed by the board of commissioners of the Illinois and Michigan canal to examine the dividing ridge of the Fox and DesPlaines rivers, within the limits of this State, to ascertain the most eligible route for conveying the waters of the Fox river to supply the Summit division of the Illinois and Michigan canal, and to report to you for your consideration the results of that examination.

The variety of opinions entertained upon the feasibility of this mode of feeding the Summit division, and the great importance of the object has led to the examinations of many summits, which a reconnoissance alone might have pronounced impracticable.

In ascending the Fox river, the first summit met with having a considerable depression, is that of Popple creek, which empties into the Fox, about one mile below Elgin, and has its rise with the head waters of the DuPage, thence the depression is continued by the western branch of Salt creek, and Salt creek itself into the DesPlaines. This summit was thoroughly examined last year, and by reference to the level obtained, found totally impracticable.

The depression of Lake and Flint creeks, discharging their waters into the Fox, and having their rise with the head waters of the northerly branch of Salt creek, Buffalo creek and Indian creek, three branches of the DesPlaines river, were next examined. By these depressions a summit can not be obtained of less than 90 feet above the surface of the Fox at the mouth of Flint creek.

The next depression examined was that of Slocum's and Bang's lakes, which head in extensive sloughs opposite to the head waters of the northerly branch of Indian creek. This route presents a summit ridge of about 100 feet above the surface of the Fox at the outlet of the Lake.

The summit of the southerly branch of Deer or Squaw creek, was next examined, so far as to show an elevation above the Fox at the mouth of said creek of 20 feet, when it was discovered that it takes its rise near the head waters of Indian creek, which were known to be too much elevated for our purpose.

The summit of Round lake which is one of a chain of lakes discharging themselves into the Fox at a point about six and a half miles from the State line; and Fourth lake, one of another chain forming the southwesterly branch of Mill creek, which discharges itself into the DesPlaines river at a point about five miles below the State line, was next examined, and found to be at the close of our examinations, the most favorable route. The next depression examined was that of Silver creek, which discharges itself into the Fox river about two miles south of the State line; this depression connects itself with Silver lake, then crossing a high ridge about three quarters of a mile, descends by a broad slough to one of the lakes which form the northerly branch of Mill creek, and by said creek to the DesPlaines river.

This route would be the shortest of any, being estimated at about one-half mile shorter than the Round and Fourth route, but the difference in level of the summits of these two routes is so decidedly in favor of the latter that a further comparison is deemed unnecessary.

There is still another depression, of which Cross lake, immediately upon the State line, is the summit. The surface of that lake is 74.385 feet above the present surface of the Fox at the State line, and in following the depressions connected with it, if it were practicable or desirable to do so, we should be compelled to go beyond the limits of the State.

The most favorable route for passing the dividing ridge having been ascertained, the valley of Fox river was examined from the State line downward, with reference to gauging the discharges of the river and selecting the most eligible point for a dam. The surface of the river at the State line was supposed to be from the best information to be obtained, about 2 feet above its lowest stage, and 1.75 below its highest, and to discharge, at the most favorable point for gauging, more than 25,000 cubic feet per minute. From several miles north of the State line the river has but little fall, and south of it, it has only descent of about one and half feet per mile for one and a half miles, when it loses itself in the Pistake lakes, which to a great extent are filled with a floating sag, high grass and wild rice. The waters of the Fox, after passing through these lakes, and receiving the Nepusink and other branches, being at the outlet about 330 yards wide, and from three and a half to nine and a half feet deep. The most eligible point for a dam is believed to be at the Indian grave, three quarters of a mile below that point. The river there is about 320 yards wide, and from five and a half to seven feet deep, with a light gravel and sandy bottom; the west bank is about thirteen feet high, the east bank consists of a high knoll, connected with the main ridge by low ground, which is about thirty-five yards wide. In case a dam should be located upon this site, an embankment will be required across this low ground. The descent of the waters of the Fox to the outlet of Round lake is 6.150 feet. The estimated descent to site of dam, two miles further south, 7.500 feet—on account of the very slight descent of the waters of the Fox, within the State limits, and the low nature of the country in the vicinity of the Pistaka lakes. The surface of the most easterly of these lakes is assumed at 2 feet only above its present level at the outlet of Round lake, where it is proposed to take out the water for the feeder.

An experimental line has been run from this point across the Round lake and Fourth lake summit to the mouth of Mill creek, on the Des Plaines, to ascertain the amount of excavation necessary to accomplish the object of the survey. The Des Plaines river was found to be 75.500 feet below the point of commencement, and the summit or deepest cutting to be 53.305 feet; and the length of said line before the waters of the feeder could discharge themselves into the Des Plaines river, by the valley of Mill creek, is 12 miles 696 yards.

An estimate of the quantity of excavation necessary has been made from the data of the dimensions and declivity that you recommended, viz: sixteen feet bottom, slopes of two to one, and a declivity of three inches per mile, and was found to be about 3,176,520 yards. The only indication of rock observed in the survey of this summit was occasional detached pieces of silicious

lime rock. About one-half mile of line below Long lake passes through a marsh which it will be difficult to drain, and about one mile and a quarter in the beds of Round and Fourth lakes.

All of which is respectfully submitted by

Your obeibient servant,

WARD B. BURNETT,

Resident Engineer Illinois and Michigan Canal.

LOCKPORT, ILLINOIS, November 3, 1837.

To the Board of Commissioners of the Illinois and Michigan Canal:

In the prosecution of surveys in the vicinity of Fox river, authorized by the Legislature of this State in March last, I was instructed by you to make such an examination of the nature of the valley of that stream within the State limits, as would be useful in determining the most feasible manner of improving its navigation.

In compliance with these instructions, a continuous compass and level line was run upon or near the banks of the Fox, between the navigable feeder of the western division of the Illinois and Michigan canal, at Green's Mill and the State line. This preliminary survey was made in the latter part of the month of October; and as a party has been almost exclusively engaged since that period upon other estimates and plans, it has been impossible to prepare those belonging to the Fox river in time for your annual report. The maps and estimates are now commenced, all of which will be presented with my report, as soon as they are completed.

In the meantime, as it may be thought desirable to know the general results of the survey and the feasibility of its object, I have formed from our field books a condensed statement of the difference of level of the surface of the Fox, at those points of the river the most known, with their respective distances from each other, and the point of commencement.

The surface of the Fox, at the time of the survey was, from the best information to be obtained, from one and a half feet, to two and a half feet, in the more sluggish above low water mark; and from one and three-fourths feet to three and one-fourth feet below high water.

The following statement of levels has been made out from the surface of the proposed feeder-dam at Green's mills, taken at zero; and the distances are such as were obtained by the survey; to which, as the river banks were not meandered closely in some distances, should be added about four miles, in order to obtain the whole length of navigation required.

(For statement see page 85, session reports of 1838-9.)

In ascending the Fox river from the feeder-dam, its general course to Aurora, including some extensive bends, is about northeast, and above that place to the State line it is nearly north.

The difference of level of its surface in the whole of that distance is 262,405 feet; and with reference to the foregoing statement it will be seen that the most of this difference is found from and below the village of Charleston, almost all of it being below a remarkable contraction in the width of the river, called "the narrows," above which there is little fall. Thus we have divisions of the river that differ essentially in their descent, the first having an average difference of level at the surface of about 3.6 feet (and in some cases five feet per mile); the second, of 2.2 feet per mile, and the third an average of 0.87 feet per mile.

These divisions differ from each other almost as distinctly in the nature of their banks, the first having them abrupt, and occasionally of high bluff rock, the second having them very favorable for a towpath, and the third, including the Pistaka lakes, having a great extent of low marsh upon either bank, on which, for a great distance, it would scarcely be possible to construct a towpath.

This variety in the nature of the banks of the Fox and its descent is such that more consideration is required for the arrangement of the particular parts of its proposed improvement, and in order that a nearer approximation may be made, by estimate, to the expense of this important work, than the result of a preliminary survey can afford, I wish to visit some parts of the river again before making my report.

Without further examination, I believe the most feasible plan for the contemplated improvement is that of slack-water navigation, with a towpath upon the most favorable side of the river, except in some places, where it will be advisable to construct short lines of canal.

All of which is respectfully submitted by

Your obedient servant,

WARD B. BURNETT,

Resident Engineer Ill. and Mich. Canal.

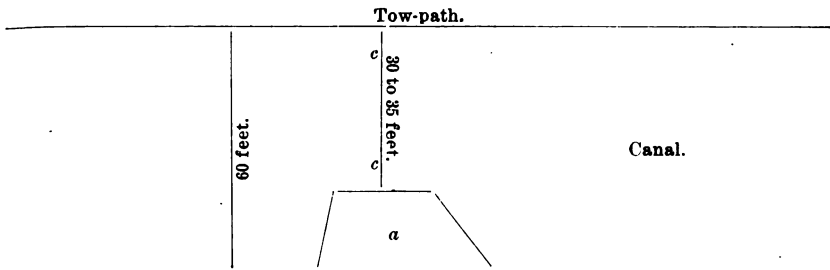
CHICAGO, Oct. 25, 1837.

To the Board of Commissioners of the Illinois and Michigan Canal.

GENTLEMEN:—Having passed over the line from Chicago to Peru, and obtained, through your chief engineer a knowledge of the plans of the intended works of art, as proposed by him, as also the various plans intended to be pursued in the execution of the very extensive parts of the excavation, and security of certain points, I now take pleasure in complying with your request in answering various questions in relation to the work.

1st. Will a guard lock be necessary at Chicago river? I do not think I should build any guard lock. If I understand this case correctly, the use of a guard lock would be to shut out the water from the lake.

If, as a precaution for safety, to guard any part of the thirty miles summit, it should not be so far distant from the locks at Lockport. The mile or two next to and above the locks at Lockport in the only place where any breach can happen in this level, and that can be secured better than by a guard lock so far off as thirty miles. There are various plans for securing against any breach in the embankment at Lockport, such as the following: Select a piece of rock cutting about ten feet deep, as near to Lockport as can be found, where the rock lays close and as few fissures as possible, contract the canal to thirty or thirty-five feet, thus:



And leave the block of rock, as at A, ten or twelve feet high; cut the face C C with care, and place in gates in the manner as described to me by Mr. Talcott and intended by the chief engineer, Mr. Gooding. These, if properly fixed to rest on the bottom until raised, will be ample security, and can be attended to instantly upon any appearance of a breach. Wickets should be made in one of the gates, and a timber may be thrown across for the top of the gates to rest against if necessary. If the board do not choose to make the gates, a heavy timber of fifteen inches square laid across, and plank four inches thick put down on the bottom of the canal, at an angle of 45 deg., with a little straw and fine stuff placed above, would stop the water in two hours.

A waste weir has been projected of 500 feet long, at some proper point (say where the rock cutting is about 4 feet), and build good masonry with water cement upon this rock to the top water line; and in order to have additional security I would have a number of gates placed in the masonry, that could be raised and let out water very rapidly at pleasure.

The value of the water power at Lockport will be in demand as soon as the water is in the canal, and to prevent breaking the bank to take out water, I would advise that a water cement wall be built, with the stone excavated from the canal founded on the rock, and carried up with a batter of one inch to the foot; and at every 60 or 80 or 100 feet I would insert a cast-iron frame of various sizes, say some of 24 inches square, 20, 18, 12 or any other size I suppose would be required, and these being placed at two feet or more above the bottom of the canal, and masonry extended between 10 and 20 feet as you please, and a gate fitted to each. I should do the same thing at Juliet, where, if I have not mistaken the information obtained, the State holds control of all the water power on the river. This will permit you to sell water power at any point and in such quantities as may be wanted, and the purchaser has nothing to do but erect his building and introduce his water, and you sell the water by the inch as is customary.

The wall with the earth behind it is a great additional security to the bank and the water is more desirable from this security. I would advise also, as a precautionary security, the leaving a bar of earth at Chicago river, of 30 feet wide, and where the water is let into the canal, I would only take away 25 or 30 feet wide. I would not fill the Summit level with the water from the Chicago, but let it fill slowly from other streams before I broke this bar of earth; this can be removed by a dredger.

2d. Will a slope wall be necessary through the earth excavation of the Summit?

If the earth proves to be all of the quality of section No. 1, and others I have seen, I would on no account have a slope wall. Such wall, below the surface of water, is very injurious to boats if they strike it; and if any wall is required it can only be to protect the bank above water, and that can be made when the water is in the canal very cheap.

I believe, with the soil in this cut vegetation may be made to grow upon it, and then the frost and rains will not disturb it much, and no wall ever be needed.

3d. Will it be necessary to cut down the towing path?

I would by no means advise cutting down the towing path; only add 50 to 100 per cent to the length of the tow rope, through the earth cutting and the trackage is easy. By being so high the horse is in a cooler atmosphere and is not so likely to be thrown into the canal at the rock excavation. The board may find it useful to make places in the rock in the form of steps, where a horse may be taken out if by accident he should be thrown in, and I see no great or even any important benefit by cutting it down.

4th. Is the present plan of drainage a judicious one, and what difficulty may be anticipated from water in excavating the Summit?

The greatest difficulty in working this division is the water, beginning at Chicago river, and from thence to the end of section 15. If I have understood the plan of the chief engineer, it is his intention to have a large ditch outside of the spoil-bank, on the upper or southeast side, and this to be extended, as now partly done, to the south branch of the Chicago.

It may perhaps be found that some of the sections near the Point of Oaks do not drain freely by this ditch; if so, then they must be drained across the canal. A guard bank of earth must be raised along the north side to keep out the water from the DesPlaines river and from the prairie. These precautions will keep out surface water, which is nearly all they have to contend with on this part. From the Point of Oaks, on section 15 to 45, is the most difficult part to drain.

Many of the sections from 15 to 39 will drain across the canal and bank out the water of the river and marsh at first in pieces or parts of their works.

But in order to drain this part, from 15 to 45 effectually, a very large drain nearly or quite the size of a forty-foot canal, should be cut from section 42 or 43, and extend eastward through the whole Saganaskee swamp to Stoney creek. This must be cut 3 feet at the canal and 8-2 feet at the summit of the swamp, 5 miles east of the canal, and then continue 7 or 8 miles further before it will find a free discharge; the water having so far to run must have a large bed, as there will be a great collection of water in heavy rains.

If the board could feel justified in laying out a canal, and excavating it regularly, 26 feet on the bottom, it would not do more than take off the land water between sections 15 and 45, which must all pass out this way, unless it passed across the canal, and that will be very difficult at times; and at finishing the work, a large and regular ditch must be cut on the upper side of the canal, from section 15 to the proposed ditch in the Saganaskee swamp. This must be outside of the spoil-bank, a guard-bank placed on the lower side, also a ditch from section 45 to section 42.

I can not urge too strongly upon the board the very great importance of having a very large drain through the Sag swamp. It is vitally important to the prosecution of the canal successfully; and its whole cost, if made as I have recommended, will be saved in the ease with which the water will be taken off from the work. From section 45 towards Lockport, a drain is to be made; the upper side is now going on; (this is right). I have been particular in describing all these drains; they are, however, only recapitulating the plans of your engineers, except as to size, and which I think judicious.

5th: Are the contract prices for the work, as let on the canal, sufficient to finish it?

I think all the contracts I have noticed are let at what I should consider very high prices. It is true that I ought not to compare prices given for work in the Atlantic States with this, because of the great difficulty in obtaining labor and provisions here; as to the latter, it will be growing better yearly, and so will the price of labor be reduced before the completion of this work. If contractors can not sustain themselves with their contracts, it will be for want of good management.

6th: "The size of the locks proposed for the Illinois and Michigan canal is 18 by 110 feet in the chamber. Do you think this the proper size of locks for this work?"

I do not think I can suggest any improvement in the size of the locks; it is the best possible. It will carry a boat with 150 tons of lading if required. The location of the locks at Lockport I think very judicious and good; and the plan of entering the Des Plaines above Joliet I think right, after making dam No. 1, on State property above the present village of Juliet, and passing down to dam No. 2. I should then, in both cases, make my lift-lock walls so high as to be a guard-lock. I should have only two dams at Juliet. The line is then plain to the Du Page, and passes that river on an aqueduct and then passes over pretty fair ground till we reach the Kankakee bluffs. In my examination of these bluffs, which have been considered as presenting great difficulties, I think your engineer has proposed locating his line well and skillfully; in keeping so far from the hills so as to give it a chance to slip without coming into his canal. I do not believe there will be any difficulties which will not be easily overcome. Around these bluffs your engineer has estimated a much larger quantity of slope wall than I should use in that work; (perhaps I may be wrong). Passing on, the canal is to cross the Aux Sable river, in a pool formed by a dam, requiring a guard-lock on lower side. The line pursues a plain route of good location to Fox river, over which it is to pass by an aqueduct. The plan of the aqueduct if built of wood on stone piers, is all right, and the location can not be improved.

Here it is proposed to take a feeder from Fox river, about four miles in length. After examining the ground on the two lines run on west side, in company with the chief engineer, I should give my opinion that the short line with the deep cutting ought to be adopted.

If hydraulic power can be obtained at Ottawa, through a branch canal, to be made for the accommodation of the village, and to lock down into the Illinois, I would locate it at right-angles with the main stem; and as soon as I left the main line, I would lock down 5 or 6 feet to the level of the plain, and carry that level through at any point between Clinton and Fulton streets, making large basins one or two blocks north of the land now sold and occupied. After bringing the canal to the line of the street, below all property sold by the State, I would carry a mill canal along the south side of the street towards Fox river, and place cotton, woolen, or other factories requiring steady power, below this canal, giving them 15 or 16 feet head and fall, then leaving a space of 200 feet (more or less) I would have canal No. 2 parallel to the other; and on this, I would sell water power for works not requiring steady power.

The line then after passing over good ground for many miles, reaches Camp rock and Pecumsagan and Little Vermilion, all of which it passes very well; and although some little expense will be required in lining and puddling the porous rock and earth, there is no doubt, the location is well made.

In relation to the termination by a steamboat canal and basin of large capacity, together with a canalboat basin between the two locks, I think the whole plan is excellent, in relation to the business of the canal and the prosperity of the State, and I do not think I can suggest any improvement.

If I should make any remark in relation to the work and plans upon this canal, it would be to substitute stone aqueducts in place of wood over Fox river, DuPage, Vermilion and other smaller streams, where wooden trunks have been proposed, more particularly Fox, Vermilion and DuPage; these being large and important works of art; they ought to be built with stone arches, if stone of good quality can be obtained.

I see there is difficulty in finding good durable stone in the country. I saw some good ones about Peru, and perhaps the same strata may be found in the hills or near Ottawa. I would by no means advise to build of bad stone. A wooden trunk upon stone piers is better than a structure of stone that will soon decompose.

If good stone for the cut work, and particularly the arches, could be found 50 or 100 miles below, and near the river, they could not be very expensive to transport at a proper state of the river; all the stone for the dead work might be found at hand.

If your board can not find good stone for the locks, it will be very unfortunate. These structures should be done in the best manner, and laid with the best of water lime. I shall send Mr. Gooding a sketch of the latest improvements in locks.

I presume it will be some time before the board will offer contracts for locks, and in the meantime, stone of good quality may be found, it is to be hoped.

In reviewing the whole line of this proposed canal, the location of it, and the plans proposed to overcome all the difficulties, I can not award too much praise to your engineer. He has shown skill and sound judgment in every part of the line, and I do not think the plans he has laid down for the prosecution of the work can be improved upon or made better with the materials so far discovered.

I have the honor to be,

Gentlemen, your obedient,

BENJ. WRIGHT.

LOCKPORT, Illinois,
November 28, 1837.

To Wm. Gooding, Esq., Chief Engineer Illinois and Michigan Canal.

SIR:—I have the honor of presenting to you the data, map and estimates of the survey of the Saganaskee swamp, Grassy lake, Stoney creek and the Cal-

umet river, to the State line, made by my party under your instructions, in July last, with reference to the proposed connection of the Illinois and Michigan canal with the Michigan and Erie canal of Indiana.

Agreeable to your directions, the survey was commenced at the mouth of Stoney creek, upon the Calumet river, and continued up that stream to the State line, with the view of locating as high a dam near the point of commencement as the nature of the stream and its banks would permit, in order to create a pool for canalboat navigation from the State to said dam, as well as to enable us to pass the summit of the Saganaskee swamp, with the waters of the Calumet, upon the line of the proposed Illinois and Indiana canal, with the least possible cutting. This line of river and canal navigation completes the proposed connection within the limits of the State.

When the survey was made, the streams were very much swollen by rain and I was informed that the Calumet was seldom, if ever, known to be higher than at that time. The distance by the left bank of the Calumet river, from the point from which the dam was afterwards located to the State line, was found to be about twelve miles; which will be lessened by the plan of improvement to eleven and a half miles, by clearing and changing the direction of that bank. The surface of water at the mouth of Stoney creek was found to be 0.820 below. The base line of level was assumed at 11.500 above the bottom of the Illinois and Michigan canal at Lake Michigan, or 5.500 below; at the old Indian ford, 2.087 above; at the State line, 5.772 above; and at a point above Gibson's bridge, and about two and one-third miles, in the State of Indiana, 7.867 above. The banks of this river are very uniformly about 8.500 above, so that in Indiana, above where one level line terminated, they were overflowed by the high stage of water to a very great extent.

These examinations made, the site of the dam was located about sixty chains above the mouth of Stoney creek, as indicated upon the accompanying maps, and its height placed at 4.000 feet above, that being considered the highest that could safely be adopted with reference to the foregoing levels and the low nature of the banks of the Calumet and much of the surrounding country. The width of the river at this point was found to be 295 feet from bank to bank; and the average depth of a cross section of the stream, to the base of the foundation for the proposed dam was fixed at seven feet; so that the average height of the dam (which has been assumed at 4.000 above the base line) will be 11.5 feet. The foundation is gravelly and probably based upon a bed of lime rock.

A dam of this height will elevate the surface of the river, at the State line, to about 5.500 above, at the lowest stages of the water, and to about 6.500 above at the highest; allowing one and a half inches per mile for back water during the lowest stage, and two and a half inches in the highest.

The right bank of the river is the most uniform, being indented with but few sloughs, as its drainage runs chiefly into the Big Calumet, which lies directly behind and parallel to it, whilst the left bank is broken by many, requiring embankment and tow path bridges. It is believed, however, that the expense of tow path bridges to cross the Calumet above and near the dam, and to recross as would be advisable in the first case before reaching the State line—and the additional expense of grubbing upon that bank, together with the fact that the tow path would then be upon the least productive side of the river, are considerations that will justify its location upon the left bank at the expense included in the accompanying estimate.

In the location of the Illinois and Indiana canal but one route was adopted, except for a short distance, in crossing from the Calumet to the valley of Stoney creek, for which distance two routes have been estimated. The shortest leaves the river 34.72 chains above the dam—the longest 18 chains above, and they both unite at station 19 of the longest line, at distances of 47.07 chains, and 57 chains, respectively, from the river. A guard-lock has been estimated, for either case, where these lines leave the river. The first line is, including 16.72 chains river navigation, 26.65 chains shorter than the last. From the junction of these two routes near Rexford's bridge, the line follows up the right bank of Stoney creek, passing eastward of Lane's island and to the left of Grassy lake (an expansion of Stoney creek), to the Saganaskee swamp, over which it then runs from a point of Lane's island to the mouth

of Paddock's brook, the main tributary of Stoney creek; thence continuing about 65 chains, to the Calumet and Des Plaines summit of the Saganaskee swamp, it follows the depression of said swamp, which descends almost uniformly to the line of the Illinois and Michigan canal, with which it connects, by a lockage of 11.25 feet, at the distance of 15 miles and 60 chains from the point of commencement. In construction and at a more favorable season, the line may be straightened and made somewhat shorter, by throwing it further from the shore into Grassy lake. The dimensions adopted for the canal were twenty-six feet bottom, and forty feet at top of water line—four feet deep—slopes of one and three-fourths to one. No declivity has been allowed. These dimensions are those proposed for that portion of the connection which is to be constructed by the State of Indiana.

The bottom of Stoney creek at the outlet of Grassy lake, or first ripple of Stoney creek, is about 0.500 below; the Des Plaines and Calumet summit of the Saganaskee swamp, as the line is located, is 9.500 above; and the point of junction with the Illinois and Michigan canal is about 3.25 above.

A second route was examined, diverging from the first, at station 41, and following a deep slough to the old Sag bridge, westward of Lane's island, thence descending that branch of the Saganaskee swamp which receives its waters from Bachelor's grove, etc. (tributary to Stoney creek), it unites with it again at station 296, near the summit of the first line. This route would give us a second summit to pass, that is higher than the first, with rock cutting to a very considerable extent, whilst the distance saved would not much exceed one mile.

The excavation of the line is estimated to contain hardened clay, but no more rock, it is believed, will be met with than is included in the small item of the accompanying estimates. It should be stated, however, that on account of the great depth of water upon the Saganaskee swamp at the period of the survey, it was not possible to test the nature of the excavation, from the summit to the turnpike, in a conclusive manner.

All of which is respectfully submitted by

Your obedient servant,

WARD B. BURNETT,

(Estimates of the stone work of abutments, guard lock, etc., is estimated upon the ground that the stone may be transported upon the prism of the canal filled with the drainage of the country, from the vicinity of the Illinois and Michigan canal.)

For the dam across the Calumet river.....	\$16,839.82	
2,000 cubic yards, guard-bank, @ 20c.....	400.00	
30,000 cubic yards towpath embankment @ 20c.....	6,000.00	
10,000 cubic yards and clearing of bank @ 25c.....	2,500.00	
260 feet towpath bridges of 30 ft. span and less, at \$2 the foot run.....	520.00	
510 ft. towpath bridges over 30 feet span, at \$2.75.....	1,402.50	
840 feet timber for seven 4 feet drains, @ 10c.....	84.00	
30 chains of first class grubbing, @ \$10.00.....	300.00	
76 chains second class grubbing, @ \$6.00.....	456.00	
142 chains third class grubbing, @ \$3.00.....	426.00	
For the proposed improvemet of the Calumet river.....		\$28,928.32
For 548,311.90 cubic yards excavation for canal (including hardened clay) @ 30c.....	\$164,493.57	
For 5,788.80 cubic yards rock excavation @ 90c.....	5,191.92	
For 11.25 feet lockage, @ \$25.00 per foot lift.....	28,125.00	
For one guard lock, gate, etc.....	8,691.25	
For two waste weirs and towpath bridges.....	1,975.00	
For three road bridges (one for turnpike).....	1,650.00	
For construction of Illinois and Indiana canal.....		281,084.41
Estimated aggregate expense.....		\$289,962.73
Add 10 per cent for contingencies.....		25,996.27
Total.....		\$285,959.00
For shortest line if adopted to Stoney creek, from Calumet river		
16,743.26 cubic yards additional @ 25c.....		4,185.81
		\$290,144.81

The several canal reports for the years 1839, 1840 and 1841, were of little importance except as showing the progress of the work and the difficulties under which the work was prosecuted. These reports can be found in full of the Reports of Sessions for 1839, 1840 and 1841.

The following excerpts are of importance in referring to former reports and memoranda:

REPORT OF THE CANAL COMMISSIONERS.

CANAL OFFICE, LOCKPORT, December 10, 1837.

To his Excellency, THOMAS CARLIN, Governor of Illinois.

SIR:—Pursuant to law the board of commissioners of the Illinois and Michigan canal have the honor of submitting their

FOURTH ANNUAL REPORT.

Since the adjournment of the last session of the General Assembly, the finances of the board have been so frequently deranged that less work has been done than was anticipated, but to have executed an amount closely approaching to a million and a half of dollars, and exceeding all that had been done in the three previous years, supplies cause of congratulation rather than complaint.

Had funds been as plenty as other facilities, the expenditure would more than have equaled the expectation entertained at the commencement of the season. The opinion was then advanced that the canal might be completed in the four following years, and, unless further hindrances ensue, the accomplishment of the promise is still practicable.

Nothing has transpired during the past year to render any of the plans of operation in the least degree questionable, nor will the estimates be far wrong. Those given in the last report are found to average some four or five per cent too low; but there can now be no rational doubt that those of the first year are a million too high.

To the canal office is attached a land office by law, and the expenses of each, though kept under appropriate and definitive heads, are aggregated under the general name of "contingencies." The examining, surveying and protecting of canal lands, prosecuting trespassers, laying out towns and selling lots, and other similar items belong properly to the land office. Besides these is a class of contingencies that are in fact tangible and profitable investments—such as houses for offices and storage, and those built and sold to the commissioners. The Saganaskee road, made in 1836, extending from Juliet to Chicago, and improving the value of the canal lands through which it passes might be made good property to the State, and a great public convenience, if finished and put under tolls.

Towards the close of April, each day increased the general anxiety produced by the uncertainty of payments and consequent dangers of suspension. The stock markets in the eastern cities and in Europe, were known to be much depressed with very little hope of an early revival. The contractors and their creditors became seriously alarmed, and the laborers, apprehensive of losing their wages, if they continued to work without security, grew restive and threatened to leave the country. They had been collected at a great expense of time and money, and to lose them at all, but especially at that critical season of the year, when floods were to be guarded against, would have been a heavy blow on every interest.

The difficulty was not altogether the want of money—though that was severe enough—but the want of security to each individual concerned. The State security was satisfactory to a large majority, but the contractor who received his evidence of indebtedness from the board, in a gross certificate could not divide it among his numerous creditors; embracing his laborers, mechanics, farmers, drovers and merchants. Many of these, nearly all, were willing to credit the State for a while, but were averse to the accumula-

tion of their claims against the contractors generally. They consequently demanded orders on the commissioners, and in most instances the contractors would have yielded, but the proposition as a general business was unhesitatingly rejected on the part of the board, for the reason that—independent of the liabilities of subjecting the commissioners to harrassing suits, should the measure be deemed illegal and funds delayed—it would require new sets of books and several additional clerks to record acceptances and keep running accounts with more than five thousand creditors.

A rapid decline of confidence was the natural result of this state of affairs, and it was plainly observable that unless it could be quickly restored the work must be suspended at the worst possible juncture.

To say nothing of the gloomy prospects of the surrounding community—all in some degree depend on the regular progress of the work—a stoppage would have been no less disastrous to the State than ruinous to a large body of contractors who had embarked their fortunes and credit in costly machinery and other perishable outfits.

Under such circumstances, and after mature deliberation, the board with the co-operation of the treasurer came to the resolution of issuing checks of various sizes, from one to one hundred dollars, on the Branch Bank at Chicago, payable ninety days after date—assuring those to whom they were paid, that, in the event of a failure to negotiate loans, the Governor would be requested and would doubtless consent to offer bonds for sale at Chicago, with permission to receive the checks in payment.

No official communication has been received from the authorities of Indiana, in relation to the lateral canal, proposed as a connection between the works of that state and those of our own, through the Calamic and Saganaskee valley; consequently everything remains as last reported. But it is a link of such acknowledged importance to the State immediately concerned, as well as to the nation, that if the laws remain as they are, the first earnest step on the part of Indiana will be cordially met on the part of Illinois.

All of which is respectfully submitted,

W. F. THORNTON,

President.

JACOB FRY,

Acting Com'r.

A list of officers or agents in the employment of the board, with the nature of their appointment, compensation, etc.:

Persons.	Office.	Compensation.
William Gooding.....	Chief engineer.....	\$3,500 00 per annum.....
E. B. Talcott.....	Resident engineer.....	2,000 00
W. B. Burnett.....	Same.....	2,000 00
M. A. Gooding.....	Assistant engineer.....	1,250 00
A. J. Mallerson.....	.. .. .	1,250 00
J. L. Hamhett.....	.. .. .	1,250 00
O. W. Jerome.....	.. .. .	1,250 00
M. Benjamin.....	.. .. .	1,250 00
W. P. Whittle.....	.. .. .	1,250 00
George W. Green.....	.. .. .	1,250 00
Michael Ryan.....	.. .. .	1,250 00
J. B. Preston.....	.. .. .	1,250 00
N. D. Elwood.....	Rodman.....	50 00 per month.....
R. E. Heacock.....	.. .. .	50 00
H. N. Rogers.....	.. .. .	50 00
H. W. Fay.....	.. .. .	50 00
S. F. Gooding.....	.. .. .	50 00
— Henry.....	.. .. .	50 00
Robert Elder.....	.. .. .	50 00
Joseph Leopold.....	.. .. .	50 00
J. Weatherford.....	Land agent.....	4 00 per day.....
J. W. Witt.....	.. .. .	4 00
J. Manning.....	Secretary.....	1,750 00 per annum.....
J. Rucker.....	Treasurer and S. clerk.....	1,000 00
R. McFarland.....	Clerk.....	1,000 00
Edward Jones.....	.. .. .	800 00

J. MANNING, *Secretary.*

LOCKPORT, December 2, 1839.

DAMAGES FROM A SUSPENSION OF THE CANAL.

SPRINGFIELD, ILL., January 4, 1840.

To the Honorable, The Speaker of the House of Representatives.

SIR:—In obedience to a resolution of the House of Representatives, calling for information relative to the damages that would follow a suspension of the canal, a report from the chief engineer, made by order of the board of commissioners, and embracing in detail all the information required by the resolution, is hereby transmitted to the body over which you preside.

The undersigned, respectfully takes the liberty to suggest that in the event of an abandonment of operations, and the consequent departure of the laborers, several years' delay in the completion of the work must be the result; and during that delay, whatever it may be, the interest on the money expended should be added to the losses estimated by the engineer.

Most respectfully, your obedient servant,

W. F. THORNTON.

LOCKPORT, December 26, 1839.

W. F. Thornton, Esq., President of the Board of Canal Commissioners.

SIR: Your letter of the 20th inst., accompanying the resolution of the House of Representatives, calling for the probable amount of damages what would result from a suspension of canal operations, was duly received.

The resolution of the House, however, does not call for the amount of damages that the work itself would sustain in consequence of the suspension of operations, but only the liabilities to be paid by the State in such an event.

These liabilities may be stated as follows, to-wit:

Amount of balances due contractors for percentage retained from estimates.....		\$257,914 13
Amount of scaling upon work performed.....		118,130 07
Amount of canal stock.....	\$384,528 42	
Less 25 per cent the present value in case of a suspension.....	96,632 10	
Amount of depreciation of canal stock.....	\$289,896 32	289,896 32
Amount of damages for loss of contracts in addition to the above.....		277,122 00
Amount of work probably performed during the present month.....		100,000 00
Total liabilities.....		\$1,043,062 52

It is perhaps unnecessary to observe that the amount of damages exhibited in the foregoing statement, is but a small part of the real damage that the State must sustain in the event of a suspension of operation upon this great work—a work that is justly deemed one of the most important in this or any other country. Every man that has examined the subject must be aware of this fact. It can not be doubted that the prosecution of a work of such importance has raised the character of the State abroad, and that the prospect of its speedy completion would bring into the State thousands of valuable settlers and millions of capital. But a suspension of operations will destroy State and individual credit; depreciate the value of State property; ruin those who have made large purchases of such property, and produce a vast deal of real suffering amongst the laborers and their families upon the canal, whose sole means of support has been derived from the expenditure made upon the work.

I believe that all the information called for by the resolution of the House, may be obtained from the statements herein made, but should further information be required, it will be furnished without delay. Very respectfully,

Your obedient sereant,

WILLIAM GOODING,

Chief Engineer of the Illinois and Michigan canal.

CANAL OFFICE, LOCKPORT, December 21, 1840.

To His Excellency, THOMAS CARLIN, Governor of the State of Illinois.

SIR:—The board of commissioners of the Illinois and Michigan canal have the honor to submit, in obedience to law, their

FIFTH ANNUAL REPORT.

At the close of the last fiscal year there remained in the treasury and in the contingent fund the sum of \$82,301 55, which, before the expiration of the first quarter, was absorbed by the payment of interest, the redemption of outstanding checks and disbursements for indispensable contingencies.

Nothing has yet transpired to render any of the plans of operations in the least degree questionable, neither will the cost be greater than was anticipated.

Commenting on the same subject, it was remarked in the report of 1839, and will apply more forcibly now that everything but the demand for public stocks is favorable to the economical advancement of an enterprise that has few parallels in the vast prosperity which must flow from its timely completion, or in the magnitude of loss and distress that would follow its suspension.

The whole amount of disbursements from the beginning, adding in contingencies, but exclusive of interest on loans, is as follows:

In 1836 to December the 1st.....	\$99,910 63
In 1837 " "	335,731 70
In 1838 " "	909,611 33
In 1839 " "	1,256,313 12
In 1840 to November 1st.....	1,330,533 06
Balance of advances to contractors.....	36,056 14
Total of disbursements exclusive of interest.....	\$3,978,155 14

Among the many onerous and responsible duties imposed upon the commissioners, none have been more difficult of execution than those connected with the protection, improvement and sales of property. In every collision of interests, if the State insists upon her rights, unreasonable individuals are apt to be displeased; and if their displeasure could accomplish their objects, it would be in vain to expect that the magnificent donation of Congress will afford any material aid in the construction of so great a work. It is the interest of a large number of citizens who have settled or intend settling on the line of the canal, to have the lands and water power sold early and at low prices; and a strong disposition has been constantly manifested by a few to throw obstacles in the way of building up State towns and creating manufacturing power, which they view and denounce as an opposition to individual enterprise. But the true policy of the State, like that of her citizens, is to sell her property to the best advantage, and where she has improved it, to claim the benefits of the improvements without regard to selfish complaint, especially as the people have been uniformly assured that the national appropriation would finish the canal. This can only be done by a stern perseverance in securing to the State every source of profit to which she is justly entitled. The lands, towns, water power, coal mines and stone quarries must bring their improved worth or they will not be sufficient to pay the current interest and discharge any considerable portion of the debts. On this subject the board remain firm in the opinion, expressed in their first annual report and repeated in several others, that "if these lands and town lots be gradually and cautiously brought into market, reserving the chief part until the canal shall have been completed and all its advantages clearly understood, there is enough to build it on its present capacious and permanent plan. But on the contrary, if sales be forced before their true value be known, there can not fail to be a deficit of several millions."

The enlargement of the natural basin at the confluence of the north and south branches of the Chicago river, authorized by the 7th section of the law of 1837, has never been commenced owing to a continual derangement of the

monetary concerns of the canal; but justice to the purchasers of State property in the vicinity of the proposed improvement and the increasing of the maritime commerce of Chicago call for the execution of the work as soon as funds can be obtained.

No official communication has been received from the authorities of Indiana in relation to the lateral canal, proposed as a connection between the works of that state and those of our own, through the Calamie and Saganaskee valleys, consequently every thing remains as last reported. But it is a link of such acknowledged importance to the states immediately concerned, as well as to the nation, that if the laws remain as they are the first earnest step on the part of Indiana will be cordially met on the part of Illinois.

All of which is respectfully submitted.

W. F. THORNTON,
President.

JACOB FRY,
Acting Commissioner.

REPORT OF THE CHIEF ENGINEER OF THE ILLINOIS AND MICHIGAN CANAL.

CANAL OFFICE, LOCKPORT, December 10, 1840.

To the Board of Commissioners of the Illinois and Michigan Canal.

GENTLEMEN:—In the regular discharge of the duties assigned me, I have the honor to submit the following:

In adopting the original plans for the construction of the various parts of the Illinois and Michigan Canal, I was governed by the best data that it was in my power to obtain. The oldest and most intelligent settlers in the country were applied to for information in relation to the highest and lowest water marks of the rivers, and such other facts as could in any way be useful. But the country was then very new, the oldest residents having been here but a short time, and the information received was consequently very imperfect. Hence the necessity of changing the plans in several instances as facts were obtained from actual observation. These changes, however, will in few cases increase the cost or difficulty of construction and have been made to give greater security to the canal, or confer some particular benefit upon State property.

There is probably no canal in the United States of any magnitude, and certainly none in a country so new as this, where the location has been made under greater disadvantages. It is true that three different surveys of the line had been made prior to 1836, when it was placed under my charge, but as stated in my annual report of that year, little or no advantage was derived from them, as not a single field book or note of the engineers ever came into my possession. The general facts communicated in their reports were of but little service in making our survey and location, and in adopting plans of construction. This subject is alluded to at this time, as it might otherwise be supposed that facts enough had been obtained from former examinations to secure the adoption, at once, of such plans as would require no change. Since the commencement of canal operations, critical observations have been made upon every part of the line, and though first impressions have generally been found correct, they have sometimes been corrected by a "sober second thought."

At the commencement of the canal I used every precaution in my power to submit to your board such estimates of the probable cost of it, as would not deceive the public, and these estimates were revised and corrected from time to time as portions of the work were executed, and the character of the remainder better understood.

All of which is respectfully submitted,

WM. GOODING,
Chief Engineer, Illinois and Michigan Canal.

REPORT OF THE COMMITTEE ON CANALS AND CANAL LANDS.

Mr. Pearson, from the Committee on Canals and Canal Lands, made the following report:

REPORT.

The committee to whom was referred a resolution, inquiring into the available means of the canal fund, and the ability of the State to complete that work, so successfully begun, beg leave to report:

By an act of Congress of March 30, 1822, the State was authorized to construct the canal over the public lands and ninety feet of land was given on each side of the canal to the State. The canal was to be begun in three and completed in twelve years. The act gave the State the right to use any materials upon Government Lands, necessary to complete the work. Another act was passed, March 2, 1827, which granted to the State a quantity of land, equal to one-half of five sections, on each side of the canal, and reserving each alternate section to the United States. Another act of Congress was passed March 2, 1833, granting to the State the right to construct a railroad in the place of a canal, and extending the time to complete either to five years. In consequence of this first grant, the Legislature of Illinois appointed, at the session of 1822 and '23, a Board of Canal Commissioners who made an examination and an estimate of the probable cost of the work. This estimate cost, which was only made from a surface survey, without ascertaining the amount of rock excavation, fell a little short of \$800,000. This survey cost the State over \$10,000. At the same session, a company, with a capital not exceeding one million, was chartered, to complete the canal, which was to be constructed and owned by the company for fifty years—after which the State had a right to purchase it, by paying the cost of construction and six per cent per annum; but, in 1826, this act was repealed.

In 1829, a new board was organized, with power to make further surveys and begin the work. And by a further act, of 1831, the commissioners were authorized to lay out towns, and did proceed to lay off and sell lots in Chicago and Ottawa, and sell lands along the route. They also reported separate statements of the cost of constructing a canal and a railroad between Lake Michigan and the Illinois river. By estimates of the first work they reported its cost at \$4,043,086.50 and that of a railroad \$1,052,488.19. At the next session, the Legislature abolished the office of canal commissioner, after these efforts had cost the State \$16,974.83. Again, at the session of 1834 and '35, Mr. Forquer, the chairman of the Committee on Internal Improvements, considering the importance of this subject, (which had been referred to in the Governor's message,) and with the feeling of a patriot, and the views of an enlightened statesman, again brought this question, by his report, to the consideration of the Senate, and to every citizen who felt the great importance of this enterprise to the present and future prosperity of our State.

The people of Illinois had, in this manner, and by the sale of canal lands and the beginning of the work, so far accepted the grant of the General Government, and had duly considered and determined whether they would yield this grant of land to any company, or undertake the canal on the faith and credit of the State.

The lucid report of Mr. Forquer, of 1835, induced another enactment of the Legislature, which seemed conclusively to fix the settled policy which the State had determined to pursue, on the acceptance of this grant from the United States, and the manner in which the work was to be commenced and completed—that is, on the sole responsibility of the State. But owing to the imperfection of the act of 1835, the Governor was not enabled to borrow the money necessary to begin the work.

Again in 1836, the people, impressed with the magnitude and value of this work to the growth of our infant but fast settling State, asked the Legislature to pass another law, empowering the Governor to negotiate a loan, on the sole faith of the State. This last act created another board of canal com-

missioners, who commenced new surveys and estimates, preparatory to renewed exertion to its completion. Contracts were let, and labor performed to the amount of \$35,744.83. In this year the commissioners laid off town lots, at Chicago, and sold them, to the amount of over \$1,000,000, with a common understanding that the canal was to be completed. The action of the Legislature thus far, and in 1836 especially, had furnished to citizens of sister states and to foreigners, sure reasons for emigration here, and the inducing and powerful motives for the investment of their capital. They became, from that time, identified with us, and feeling a warm solicitude for the speedy success of an enterprise that was to redound to the wealth, population and honor of their adopted State.

Such being the supposed fixed policy of the Legislature, in regard to this work, and the pervading sentiment, in and out of the State, as to the ability and determination of the people to finish it, that the population in that region and many other sections has, in consequence, increased in five years beyond any former period in our history, and beyond the most ardent anticipations of our citizens. Capital has flowed in upon us; extensive farms have been opened; mills and machinery erected on streams, in various parts of the State, likely to be advantaged by the construction of the canal; the cattle-grower on the Wabash and the more southern counties, and in the central part of our State; the grain-grower of the west and southwestern part; all have participated in the expenditure of money thus far, and many emigrated, with the expectation of receiving advantage by the finishing of this enterprise. Again in 1837, the Legislature, coming afresh from their constituents, after the work was begun, and impressed with its importance, passed an amendatory act of 1836, to aid in its completion. This year there was expended on the canal \$346,899.43. The commissioners also sold additional town lots and lands, to assist in paying off the canal debt. These lots and lands, also, were sold, as the others had been, with the common understanding that this enterprise was not to languish or fail, by our neglect to put in requisition the available means, so ample, and which had been looked to, ultimately, for the final completion of this work. The close relation, then, which exists between this long-contemplated improvement and the lasting interests of our citizens, and so universally acknowledged and by few questioned, induces the committee, with the more confidence, to ask its final completion.

In relation to this important enterprise, the time has passed when a timid and unsettled policy will satisfy the wants and expectations of an intelligent community. In this matter, then, a steady, economical action and well directed efforts are all that the people now expect of their public agents. With nothing short of this will they be satisfied.

The committee will not dwell longer on this branch of the subject, but will hasten to answer a question which has been recently made by some gentlemen of wisdom, in and out of the Legislature, "whether it would not be the part of wisdom now to abandon this canal and construct a railroad along the route?" The committee are not insensible to the benefits arising to the country from the completion of well planned railroads. But they have no difficulty in coming to a conclusion to prefer canals over railroads. We know that a few years since opinion inclined to favor railroads in preference to canals, but well may the committee remark, in the language of a clear minded statesman, "that time and experience seem to have tested the comparative value of these two modes of facilitating the commercial intercourse of different regions, and public judgment has settled down in favor of canals in preference to railroads, whenever the country is peculiarly suited for their construction;" and there can be no doubt that nature has pointed out this, as the character of the country lying between the navigable waters of the Illinois and Lake Michigan. That railroads are better adapted to the speedy transportation of passengers than canals, seems to be admitted, and not questioned, and wherever that is the main object intended to be effected by their construction, they are doubtless entitled to a preference over canals, but such can not be the case in reference to this work. The great end to be attained in connecting these waters by an artificial communication is doubtless the promotion of the manufacturing and agricultural interests of our

country, "which are already languishing for an adequate market to the consumption of the superabundant productions. These, too, are generally of a bulky character, and such, too, is the kind of many commodities out of the State, which it will be our interest to receive in exchange for our own productions. Again, the committee would urge as a preference of canals over railroads, that the former are not proposed to be used and can not well be used as monopolies which are so repugnant to the feelings of a large majority of our citizens. On a canal a trader or farmer may use his own canal boat or craft, and in this way become his own carrier and vender of his own productions, and thus save the freight and the expense of hired labor. From the nature and use of canals, they admit of competition of all kinds of business connected with them. But can the committee say the same of railroads? They are necessarily confined to a few, or the exporter has necessarily to be subject to the pleasure of a company or their supercilious agents. When constructed, a canal is steadily improved by wear and time. A railroad, on the contrary, is rapidly wearing out and needs constant repairs. This canal when completed, as the committee will shortly prove, will necessarily create an exhaustless and valuable water power at seven different points on the route. A railroad can give no such advantages. Where, too, in any country, is valuable water power more needed and will advance the interests of the people more than in Illinois?

The committee think it unnecessary further to pursue this subject, satisfied as they are, that the superiority and advantage of canals, and especially the one to connect the waters of the Illinois river with Lake Michigan, is now almost universally admitted.

The State having, then, in its wisdom, weighed well this enterprise, in the beginning, and entered largely on the prosecution of it, upon its present plan, and having expended towards its completion, something over four millions of money, we find the question is now put by some gentlemen: "Shall this work be abandoned? or, shall it be completed?" The committee, in answering this question, which seems to them a novel and startling inquiry, after this work is thus advanced, and when nearly the whole country is vitally interested in its success, and would feel a deep mortification at its defeat, will state the facts and reasons which govern them in coming to the unchangeable conclusion that the abandonment or defeat of this enterprise would be a ruinous and suicidal policy to our State, and would the more deeply involve us in debt, if not in hopeless bankruptcy.

JACOB FRY.

Extracts from an act entitled, "An act to amend the several laws in relation to the Illinois and Michigan Canal." Approved Feb. 26, 1839.

Section 2. In all sales of lots and lands under the provision of this act, the following conditions shall be annexed and shall compose part of the contract.

Paragraph 11, of section 2:

Lands situated upon streams, which have been meandered by the surveys of public lands by the United States, shall be considered as bounded by the lines of those surveys and not by the streams.

Section 18. Islands and inundated lands situated within the limits of sections of land granted to the State by the United States, shall be deemed occupied and held as canal land.

AN ACT DECLARING THE DES PLAINES RIVER A NAVIGABLE STREAM.

In force Feb. 28, 1839.

Sec. 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly, That the Des Plaines river, from the point where it most nearly connects itself with the Illinois and Michigan canal to its source within the boundaries of this State, is hereby declared a navigable stream, and shall be deemed and held a public highway, and shall be and remain*

free, open and unobstructed, from the said point of connection with the said canal to its utmost limit within this State, for the passage of all boats and water-crafts of every description.

Big Muddy navigable.

Sec. 2. *Be it further enacted*, That the Big Muddy river, in Clay county, be, and the same is hereby, declared a navigable stream as high up as township number five north, of range eight east; (Fox river in Clay county navigable) and Fox river, in Clay county, is also declared a navigable stream as high up as Watertown; which said stream shall remain free, open and unobstructed, for all boats and water-crafts of every description whatever.

Approved February 28, 1839.

JULIET, June 26, 1839.

O. W. Jerome, Esq.

SIR:—In the month of Nov. we removed 36 feet of the dam at McKee mill, which we have neglected till now to apprise you of and of course have received no pay for the cost of removing. It was thirty-six dollars, the timber that came out of it lies on the bank and in the river, we have used but one small stick of it.

Yours respectfully,

D. BREEDBURG,

for James Ryan.

April 6, 1841, I. N. Morris succeeded W. F. Thornton as president, and Newton Cloud succeeded John N. McClernand as Treasurer of the Board of canal commissioners. Jacob Fry remaining as acting commissioner.

SPRINGFIELD, March 31, 1842.

DEAR SIR:—In reply to yours of the 23 ultimo requesting me to state what time my services commenced as treasurer of the canal board, I can inform you that they commenced the 1st day of October, 1839. I informed Gen. Fry, or intended to do so, at what time they commenced, but I presume he forgot to inform you. In as much as you have no money, I believe that I would prefer taking the little soap that is coming to me in Canal Scrip, "well indorsed" as you say with the name of "Joel Manning" across the face; or in other words the first scrip issued endorsed by me.

How do you get along with the "big ditch?" I must try and get up to see you this summer or next fall, and try and regulate you. I believe I authorized Mr. Rucher to sign my name to any vouchers necessary to be given.

Your friend,

JOEL MANNING, Esq.

D. PRICKETT.

Length of Canal from commencement to different points on its line to termination. Nov. 12 1842:

Distance from Chicago basin to junction with canal	4.85 Miles
" " section 1 to 49 inclusive	20.11 "
" " " 50 to 68 "	9.40 "
" " " 70 to 75 "	3.67 "
" " " 76 to 108 "	16.86 "
" " " 109 to 154 "	20.36 "
" " " 155 to 168 "	9.76 "
" " " 169 to 197 "	15.87 "

Whole length of Illinois and Michigan Canal.....100.88 Miles

Office Nov. 14th, 1842.

SEPTEMBER 4, 1837.

A List of Officers and Agents Employed by the Board of Commissioners.

Names.	Office.	Entered Service.	Left Service.
William Gooding	Chief engineer	March 1, 1837 .....	.....
E. B. Talcott	S. A. engineer	March 10, 1837 .....	.....
Wm. Jerome	"	June 13, 1837 .....	.....
W. B. Burnett	"	June 18, 1837 .....	.....
J. L. Hanchett	J. A. engineer	April 1, 1837 .....	.....
E. Robinson	"	May 13, 1837 .....	.....
J. S. Killaby	"	April 1, 1837	Dec. 10, 1837
O. W. Jerome	"	July 4, 1837 .....	.....
M. A. Gooding	"	June 16, 1837 .....	.....
Michael Ryan	"	June 20, 1837 .....	.....
J. Manning	Secretary, etc	April 1, 1837 .....	.....
J. R. Sloc	Treasurer, club	April 10, 1837	July 19, 1837
J. B. Preston	Surveyor, etc	June 21, 1837 .....	.....
A. G. Caldwell .....	" .....	" .....	.....
Joshua Rucker	Treasurer, club	August 9, 1837 .....	.....

MARCH 8, 1838.

William Gooding	Chief engineer .....	.....	.....
E. B. Talcott	S. A. engineer .....	.....	.....
W. Jerome .....	" .....	.....	.....
W. W. Burnett .....	" .....	.....	.....
J. L. Hanchett	J. S. engineer .....	.....	.....
E. Robinson .....	" .....	.....	Dec. 1, 1838
O. W. Jerome .....	" .....	.....	.....
M. A. Gooding .....	" .....	.....	.....
Michael Ryan .....	" .....	.....	.....
Green .....	" .....	.....	.....
M. Benjamin	"	March 1, 1838 .....	.....
J. B. Preston	Surveyor and draftsman .....	.....	.....
Mathewson	Draftsman	March 1, 1838 .....	.....
Wm. Whittle	Rodman .....	.....	.....
Joel Manning	Secretary .....	.....	.....
Josh Rucker	Treasurer, club .....	.....	.....
Heaverick	Rodman .....	.....	.....
Henry .....	" .....	.....	.....
Geo. H. Norris	"	March 29, 1838	July 19, 1838
Jos. Troskolarki	"	July 11, 1838	Oct. 1, 1838
Ruband McFarlan	Clerk	July 8, 1838 .....	.....
John B. F. Rupell	J. A. engineer	Nov. 1, 1838 .....	.....
H. W. Fay	Rodman	March 1, 1839 .....	.....
Richard McFarlan .....	" .....	.....	.....
Wm. P. Wiltre .....	" .....	.....	.....

JUNE, 1839.

Wm. Gooding	Chief engineer .....	.....	Dec. 12, 1839
Peter Stewart	Master mason .....	.....	.....
E. B. Talcott	Resident engineer .....	.....	March 31, 1840
W. B. Burnett .....	" .....	.....	.....
M. A. Gooding	Assistant engineer .....	.....	.....
A. J. Mathewson .....	" .....	.....	.....
John L. Hanchett .....	" .....	.....	.....
O. W. Jerome .....	" .....	.....	.....
M. Benjamin .....	" .....	.....	.....
W. P. Whittle .....	" .....	.....	.....
G. W. Green .....	" .....	.....	March 31, 1840
Michael Ryan .....	" .....	.....	.....
J. B. Preston .....	" .....	.....	March 31, 1840
H. W. Elwood	Rodman .....	.....	.....
R. E. Heacock .....	" .....	.....	.....
H. N. Rogers .....	" .....	.....	.....
H. W. Fay .....	" .....	.....	.....
S. F. Gooding .....	" .....	.....	August 31, 1839

Officers and Agents—Continued.

Names.	Office.	Entered Service.	Left Service.
— Henry.....	Rodman .....	.....	.....
Robert Elder .....	.. ..	.....	.....
Jos. Leopold	Land agent.....	.....	March 31, 1840
J. Weatherford .....	.....	.....	.....
J. B. Witt.....	Secretary.....	.....	.....
J. Manning.....	.....	.....	.....
J. Rucker.....	Clerk.....	.....	.....
R. McFarlan.....	.....	.....	.....

JUNE, 1840.

Wm. Gooding.....	Chief engineer.....	.....	.....
E. B. Talcott.....	Resident engineer.....	.....	.....
Peter Stewart.....	Master mason.....	.....	.....
M. A. Gooding.....	Assitant engineer.....	.....	May 1, 1841
J. L. Hanchett.....	.....	.....	.....
A. J. Mathewson.....	.. ..	.....	May 6, 1841
O. W. Jerome.....	.....	.....	.....
M. Benjamin.....	.....	.....	May 31, 1841
M. Ryan.....	.....	.....	.....
W. P. Whittle.....	.....	.....	May 17, 1841
H. N. Rogers.....	Rodman .....	.....	May 1, 1841
H. W. Elwood.....	.. ..	.....	.....
R. E. Heacock.....	.....	.....	May 6, 1841
H. W. Fay.....	.....	.....	May 1, 1841
Robert Elder.....	.....	.....	.....
Thos. Henry.....	.....	.....	May 5, 1841
J. Weatherford.....	Land agent.....	.....	.....
J. B. Witt.....	.....	.....	.....
J. Manning.....	Secretary.....	.....	.....
J. Rucker.....	Treasurer's clerk.....	.....	.....
R. McFarlan.....	Clerk.....	.....	April 17, 1841

APPRAISERS OF DAMAGES.

Persons and Residence.	Persons and Residence.
THE SEVENTH JUDICIAL DISTRICT.	THE NINTH JUDICIAL DISTRICT.
M. L. Coval, Bloomington	Jos. Napier, Naperville.....
J. B. Witt, Lockport.....	A. R. Dodge.....
H. Madden, Coltonville	E. S. Leland, Oregon.....
I. R. Webber, Urbana.....	W. J. Mix, Oregon.....
B. Mitchell, Bloomington.....	G. C. Ball.....
	B. R. Shelden.....

List of Officers and Agents—Continued.

APRIL, 1841.

Persons.	Office.	Entered service.	Left service.
William Gooding.....	Chief engineer.....	.....	Dec. 1, 1844
E. B. Talcott.....	Resident engineer.....	.....	Nov. 30, 1842
J. L. Hanchett.....	Assistant engineer.....	.....	Sept. 8, 1842
M. Ryan.....	.....	.....	Nov. 25, 1842
H. W. Elwood.....	Rodman .....	.....	Oct. 28, 1842
Robt. Elder.....	.....	.....	March 22, 1842
J. Manning.....	Secretary.....	.....	.....
J. Rucker.....	Treasurer's clerk.....	.....	Nov. 30, 1842
John Frierson.....	Secretary's clerk.....	April 17, 1841	April 29, 1842
J. Weatherford.....	Land agent.....	.....	March 21, 1843
J. B. Witt.....	.....	.....	March 15, 1843

List of Officers and Agents—Continued.

Persons.	Office.	Entered service.	Left service.
A. J. Galloway.....	Assistant engineer	July 20, 1841	March 15, 1843
M. Benjamin.....	.....	July 19, 1841	Aug. 17, 1841
A. J. Mathewson.....	Surveyor.....	July 19, 1841	Sept. 18, 1841
N. D. Elwood.....	Assistant engineer	Oct. 28, 1842	Jan. 15, 1843
Thos. Henry.....	Rodman	July 19, 1841	Aug. 17, 1841
H. W. Fay.....	.....	July 19, 1841	Aug. 17, 1841
G. W. Clarke.....	Assistant engineer	Sept. 24, 1841	June 6, 1842
G. W. Kerrsted.....	.....	Sept. 24, 1841	March 14, 1843
Thos. Henry.....	.....	Sept. 24, 1841	June 24, 1842
Isaac Cook.....	Land agent.....	March 18, 1843	Jan. 25, 1845
Joel Armstrong.....	.....	Jan. 25, 1845	.....

ASSESSORS OF DAMAGES.

Persons and Residence.	Persons and Residence.
FOR THE SEVENTH JUDICIAL CIRCUIT.	FOR THE NINTH JUDICIAL CIRCUIT.
M. L. Coval, Bloomington.....	Jos. Napier, Naperville.....
J. B. Witt, Lockport.....	D. S. Leland, Oregon City.....
H. Madden, Coltonville.....	W. J. Mix, Oregon City.....
I. R. Webber, Urbana.....	John Oliver, Vienna.....
B. Mitchel, Washington.....	Wm. Carlin, Carrollton.....
W. P. Brown, Bloomington.....	Elijah Adams, Waterloo.....

Governor Thomas Ford in his inaugural to the Thirteenth General Assembly, delivered at Springfield, Illinois, December 8, 1842, used the following language: "Let us offer to our creditors all that we have, at fair and reasonable prices, at least the forty-two thousand acres of land entered under the international improvement system, together with two hundred and ten thousand acres donated to the State by the general government, the railroads finished and unfinished, and all the property of the State, pertaining to the railroad system.

"It is believed that many of our creditors would receive this property at reasonable prices, and if so, a large amount of our debt would be immediately extinguished; if not, the lands will be continually increasing in value, and becoming more and more available as a resource in future.

"The canal lands and lots and other property belonging to it, stand upon a different footing. This property was first given to the State in trust to make the canal. It was afterwards appropriated by the General Assembly to that specific object, and solemnly pledged to creditors for the payment of money heretofore borrowed, and which money has been used in the construction of the canal so far as it has proceeded. Those creditors, therefore, have such a separate and exclusive right to its avails, as would not without their consent, justify throwing it into an aggregate fund for a general payment of debt. If they should require it, we would be bound in duty and honor to surrender it to them. It is however, believed that no such requisition will be made. They understand their true interest too well; they know as well as ourselves, the importance and profitable character of this great work, and would prefer looking to its probable completion rather than an immediate sacrifice of the means of carrying it on, for ultimate payment. They must, and do understand, that if this property should be sacrificed, the State will have no means of payment for a long time to come; whereas, if the canal progresses, to completion, the lands and lots and water power will be quadrupled in value, and the tolls alone would in a short time pay interest on all the debt contracted for its construction.

"In this view of the subject, it is manifestly for the interest of the people, as well as our creditors, that the work should progress to completion, if possible before any of the canal lands or other property shall be sold, and it is equally the interest of all, that the work should not be abandoned, but prosecuted with all the energy and reasonable means in our power as one of the surest and speediest measures tending to the extinguishment of our debt.

"The sum of four million eight hundred thousand dollars, or thereabouts, has already been expended on this work in its construction and in the payment of interest; seven hundred and fifty thousand, five hundred and thirty dollars and forty-two cents, of which has been raised by a sale of lands, lots, timber and stone; 10,580 acres of land were sold in 1830 for \$14,204.87; also at the same time 126 lots in Chicago and 9 lots in Ottawa were sold for \$4,594. Since 1836, 40,295 acres have been sold for \$302,248.40; and about 189 lots in LaSalle, Ottawa and Lockport for \$77,793; stone and timber to the amount of \$9,659.00, and sales were made in Chicago and Ottawa in 1836 for which cash has been received to the amount of \$544,074.97; and there is now due the canal fund on account of sales, the sum of \$207,682.53.

"In addition to this balance, the property belonging to the canal fund is as follows: Two hundred and thirty thousand, four hundred and sixty-seven acres of land, 370 lots in Chicago, 679 in Lockport, 914 in Ottawa, 1,528 in La Salle, other town property to be laid out at Juliet, Du Page and other places; and the water power on the entire line of the canal; the whole, valued by the acting canal commissioner, from whom these statistics were derived, at the sum of \$5,050,000.00. It is however, due to the subject to state, that this valuation is predicated upon the hypothesis that the canal is to be completed, or in sure prospect thereof.

"I therefore, respectfully recommend to the General Assembly, that the further measures to be adopted for the prosecution of the work, should be upon the plan of a moderate sized high level canal. I am fully sensible of the great responsibility assumed by me, in making this recommendation, nothing but a full conviction of our inability to proceed with the enlarged work would justify a change of plan after it has progressed so far as it has. But, in view of our present and prospective want of credit and resources, it does seem that the enlarged work is not to be achieved by any means now in our power; and, indeed, it does seem that we are to choose between reduction and no canal of any description."

REPORT OF THE COMMITTEE ON CANAL AND CANAL LANDS,

To whom was referred that part of the ex-Governor's and Governor's message which relates to the canal.

REPORT.

An examination of the history and nature of this majestic work shows that it was first projected by the general government, and for more than twenty years has occupied the attention of the State of Illinois, during which time it has been the subject of repeated legislative action. From the nature of the work, its connecting such great interests, the high source from which it emanated, and the long time its construction has been contemplated by the State, it would seem as if we might have long since expected its completion; but your committee regret to say that they find it yet remains unfinished, and it is now left for the Legislature to decide whether it shall longer continue in its present condition; whether the people shall still be deprived of its advantages, and the amount already invested in its construction, remain a total loss to the State, or whether by prompt, energetic and efficient measures they will hasten its completion and thereby secure a sure and profitable market for the abundant products of our fertile soil, relieve the pecuniary embarrassments of our industrious citizens, enhance the value of the property of the State, render available the large amount already invested, open a channel for the influx of wealth and emigration, and by the large amounts realized from the sales of canal property and the tolls from the canal, enable the State to lessen

the public debt, to pay the interest upon her liabilities, redeem her plighted faith, preserve her honor and ultimately remove the burdens that are now paralyzing the energies, stifling the efforts and blighting the happiness of her citizens.

After careful investigation and close examination of the various plans and suggestions for carrying on the canal, the committee have come to the conclusion that there is but one plan which, at the present time, appears practical and worthy of consideration: they have come to this conclusion, from an examination of different letters and plans from the most distinguished citizens and capitalists in the city of New York and also from London. The views given in the letters and plans referred to are judicious, sound and practical, and if carried into effect would undoubtedly secure the completion of the canal and the ultimate payment of the whole debt of the State. There is no interest so immediately identified with that of the State as the interest of the bondholders. Whatever tends to raise the price of bonds benefits them alike with the State, and whatever plan insures the completion of the canal, confers alike benefits to the State and her creditors, for when once completed the canal not only opens new markets to the citizens of Illinois, and increased prices for her produce, but also gives greater security to the bondholders for the full payment of their interest and principal. So it will be readily seen that if a mutual arrangement, satisfactory to the State and her creditors, can be entered into to insure the speedy completion of the canal, it is the policy of both so to do. The time for theorizing upon abstract principles, for indulging in dreams of future greatness, or splendid schemes of grandeur has passed. We can no longer dwell upon what a sovereign state should be able to do, but we must complete things as they are; we must look at sober realities, and make the most judicious use of the little that remains of our imaginary wealth and apply those means yet within our power in repairing the ruined fortunes of the State. If we attempted to rear a structure of too gigantic proportions, one which fell of its own cumbrous weight, it does not become us to spend our time in vain regrets and grieve in idleness over our disappointments, but let us gather what yet remains uninjured from the ruins and erect a fabric more proportionate to our means. The proposition for carrying on the canal made by many of the creditors of the State, is as follows:

First, the State to convey all the canal lands, town lots, water power, coal beds, stone quarries, and all the canal property, together with all the tolls that may be derived from transportation upon the canal to trustees, who shall hold the aforesaid property in trust for the canal bond holders. The aforesaid trustees to be appointed as follows: Two on the part of the creditors, and one on the part of the State. The canal bond holders are to subscribe a sum sufficient to complete the canal, to be disbursed by the trustees in the construction of the canal. The trustees to have all the powers given to the canal commissioners. After the canal shall be completed, the trustees are to proceed to sell the canal property from time to time, as the demand may require. All receipts of moneys are to be paid, first, to reimburse the subscribers for the new advance, and second, to pay the bonds they now hold against the State. Those bond holders subscribing to have a preference over all others, and those refusing to subscribe to be paid last. After the creditors, who may advance the required means, are paid the amount of subscription and the bonds they now hold, the duties of the board of trustees shall cease, and the State again to have the entire control of the canal and its property. If the canal bond holders should refuse or neglect to subscribe the necessary sum to complete the canal, then the internal improvement bond holders are to be allowed to come in and subscribe, and have the same privileges of the subscribing canal bond holders as far as they can be given consistent with the faith of the State. Appraisers are to be appointed to assess the damages of the present contractors, and obtain a relinquishment of their contracts. The contractors should have the privilege of either retaining their contracts, or they can make a mutual arrangement with the board of trustees, or subscribing to the amount the State owes them, and paying their share in work, and be entitled to all the benefits given to the other bond holders. The holders of scrip and State indebtedness to be al-

lowed to exchange the same for state bonds, bearing interest. The Governor, or his authorized agent, to open a negotiation with the bond holders, for the purpose of bringing about the proposed arrangements, and in the event of the bond holders refusing to enter into an agreement on the proposed plan, then the Governor to have the right to accept any alteration in the foregoing plan or proposals that the creditors may see proper to make, that may be consistent with the true interest of the State.

In recommending the adoption of the foregoing plan, your committee have only been influenced by a desire to forward the interests of the canal. In all the attention they have been able to bestow upon the subject, they have been unable to discover any other plan that would be likely to insure the speedy completion of the canal. They have not thought proper to dwell upon any of the other various plans that have been suggested or presented before them for their consideration, simply for the reason that none of them come from the parties who would be required to make the necessary advances to complete the canal. It would be a matter of doubt and uncertainty, even if any of them should be consistent with the interests of the State, whether they would be accepted by the capitalists. The propositions upon which the foregoing plan is based, come from a source entitled to the highest credit, and propose all that the State can reasonably desire, and have, therefore, been more attentively considered by your committee.

We believe there are many causes that will tend to render the communication by the canal and lakes annually more favorable to our citizens.

The cost of freight upon the lakes will be constantly lessening as the competition increases. It has been but a short time since the business upon the upper lakes first commenced, and the cost of freight has consequently been much more than it will be after regular lines have been established between the Mississippi and New York. In 1832 there was but one steamboat arrival in Chicago. In 1841 there were seventy arrivals at that place, and the receipts from freight and passage amounted to \$750,000. The earnings of all the boats and vessels upon the lakes in 1841 amounted to \$1,517,127.27.

So great are the changes, and so rapid is the march of improvements, that we can fix upon no standard of comparison. But yesterday the mighty West slumbered in unbroken solitude, unknown to civilized man, today we behold it covered with rich and beautiful farms, and inhabited by more than three millions of active, intelligent, and enterprising citizens. But forty years since, the whole country embracing Ohio, Indiana, Illinois, Missouri, Michigan, Wisconsin and Iowa, contained but 51,006 inhabitants. In 1810, it contained 267,562. In 1820, it contained 850,840. In 1830, it contained 1,608,048. In 1840, it contained 3,331,861. If we judge of the future from the past, we shall see, that in a few years, this section will contain more wealth and population than all other parts of the Union.

In conclusion, the committee will say that they have no doubt but that it is within the power of the State to secure the speedy completion of the canal. And the committee also believe that when completed, it will enable the State to extricate herself from her present pecuniary embarrassments. Let Illinois be true to herself, carefully guard her honor, be prudent and economical, show a rigid adherence to principles of justice, and prove to the world by all her acts that though poor, yet she is honest, and she will soon rise above her present difficulties, and ere long will hold that proud position in the Union which she is destined to occupy.

The completion of the canal will secure to our farmers a rich reward for their honest labors, good prices and a ready sale for their produce, revive business, restore prosperity, and give a new impulse to trade and commerce. Emigration will pour into the State, our vacant lands will be sought after, our wild prairies will be transformed into rich and beautiful farms. Capital will flow into the country, industry will be encouraged, enterprise will be stimulated, and the citizens of Illinois will soon become prosperous and happy.

DECEMBER 14, 1842.

Read and laid on the table.

Mr. Ryan, from the Committee on Canal and Canal Lands, to whom was referred the resolution from the House, together with the proposed amendments offered in the Senate, upon the subject of memorializing Congress in relation to an additional grant of lands, to aid in the completion of the Illinois and Michigan Canal, have had the same under consideration, and have directed me to

REPORT:

That in consequence of the present embarrassed condition of the canal the total suspension of the work, and the utter inability of the State to afford any aid, they deem it right and proper to ask of Congress further aid in carrying on and completing this great and noble improvement. Your committee would respectfully suggest the propriety of so framing the memorial as to place the requisition upon the ground of this canal being a national work, and that it was in consequence of the donation from the General Government that the State was induced to commence this gigantic undertaking, under the belief that the appropriation of land was sufficient to complete it. That the donation was based upon the estimates of the United States engineers, and that time and further developments have shown that their estimates covered but a small part of the real cost of this canal. That they believe it was the intention of Congress to have the donation cover the cost of the work, and that now, the State having become involved and unable to progress with it, Congress are in honor bound to render further aid.

The Illinois and Michigan canal has always been regarded as a national work; it was first commenced in consequence of a grant from the general government; it has been kept separate from all other works, and it should be left to rely on its own merits for support, as also the other public works. We fear that in attempting to accomplish so much we may defeat the object in view; we would therefore recommend that in all memorials for further aid in completing our important public works, they should be kept separate and distinct, and in conclusion, the committee would recommend that the senate concur in the adoption of the resolution as it came from the House.

EXECUTIVE DEPARTMENT,
SPRINGFIELD, December 21, 1842.

To the Hon., the Speaker of the House of Representatives.

SIR:—I have the honor herewith to lay before the House of Representatives the seventh annual report of the Commissioners of the Illinois and Michigan Canal, and the accompanying documents.

I have the honor to be, etc.,

THOMAS FORD.

REPORT OF THE CANAL COMMISSIONERS.

CANAL OFFICE, LOCKPORT, December 15, 1842.

To His Excellency, THOMAS FORD, Governor of the State of Illinois.

SIR:—In obedience to law, the Board of Commissioners of the Illinois and Michigan Canal beg leave respectfully to submit their

SEVENTH ANNUAL REPORT.

In entering upon this duty we promise to be as brief as the nature of the subject will admit. The voluminous character of the reports of the treasurer, secretary and engineers, and the late period at which these reports were received, and a desire to place them before the Legislature at as early a day of the session as possible, actuate us to pursue this course.

To arrive at a proper knowledge of the operations of the new board, and a just view of their proceedings, reference must be had to the condition of the work at the time they took charge of it in March, A. D. 1841. There was

then in circulation \$409,448.70 of six per cent scrip issued on the first of March, 1840, and a large balance due to contractors upon work previously done, the exact amount of which we have no means at present of ascertaining. The secretary was called upon some time ago to prepare a statement exhibiting this fact, but has failed to do so, and it is now impossible to get at the precise sum. Mr. Gooding, the chief engineer, has, however, made an approximate estimate, based upon the best data he can obtain, and supposes it will not vary much from \$234,259, besides the retained percentage. To meet these demands there was nothing in the treasury except a few thousand dollars of State bank paper, belonging to the contingent fund, which was soon absorbed in the payment of salaries and other incidental expenses. The scrip had been issued under the expectation that it would be redeemed at an early period, and contractors who had balances due them were solicitous for payment. The Legislature at its then recent session had adjourned without making any provision to meet these demands, or for the further prosecution of the work, and as might be expected general distrust and embarrassment ensued throughout the entire line of the canal.

For full reports of this commission for the reports of the secretary, treasurer and for a list of canal lands sold in 1841 and 1842, together with a complete report of engineers for 1842, reference is made to reports of Illinois, 1842 and 1843, pages 51 to 164, inclusive.

The following excerpts, however, being of special interest, are here reproduced:

REPORT OF CHIEF ENGINEER.

To the Commissioners of the Illinois and Michigan Canal.

GENTLEMEN:—In the regular discharge of my duties, I beg leave to submit the following

REPORT.

My annual report for 1840, with that of the resident engineer, which accompanied it, gave a detailed account of the operations upon the canal up to the 1st of November of that year. In order to show the exact condition of the work up to the latest period practicable, the accounts are now brought up to the 1st of December. The accompanying report of Mr. Talcott, the resident engineer, describes so fully the extent of operations during the last two years, and the present condition of the canal, that further remarks upon this subject seem almost unnecessary.

In each annual report which I have had the honor of submitting to the board, an approximate estimate of the cost of the canal has been given. As more work was from time to time placed under contract, or the character of any portion of it more fully developed, the estimates were changed or modified so as to approach as near the true cost as the circumstances would permit. The estimates for the present report have been revised under my instructions to suit the present times, and notwithstanding the large proportion of the work which is under contract, and which has consequently been carried in at contract prices, the total cost of the whole canal, in the present estimate is very considerably reduced. This, however, is not wholly effected by a reduction of prices, but in part by the omission of several heavy items which are not considered indispensable to the successful navigation of the canal.

The cost of the canal may now be represented as follows, to-wit:

The amount of work which has been completed and that which	
is now under contract.....	\$6,751,006 21
The amount of work not under contract.....	906,665 11
For superintendence and contingencies.....	350,000 00

Total cost of the canal.....\$8,007,661 32

The total amount of work done is.....\$4,699,492 03
 Cost of superintendence and contingencies properly chargeable to
 construction, account up to this time about..... 210,000 00

Total expenses incurred.....\$4,909,492 03
 Total amount remaining to be done.....\$3,098,169 29

Of the amount to be done \$2,958,169.29 is for unfinished work, and the balance (\$140,000) for superintendence and contingencies.

From the time the Illinois and Michigan canal was first projected there seems to have been a difference of opinion amongst its friends in relation to the proper size of the work and plan of its construction. As this difference of opinion still prevails, in order, in some measure to account for it, it may not be improper to allude to the different surveys which have been made, and the different opinions entertained and expressed by those who made or directed them, in relation to this great work.

The first survey was made in the autum of 1824, by Colonels Post and Paul, under the direction of Messrs. Sloo, Brown, West and Smith, canal commissioners. An examination of the reports of these gentlemen will show that notwithstanding their ability, their survey and estimates did not give a correct idea of the obstacles to be overcome in the construction of the canal. In fact, the little that was known of the country previous to the commencement of the examinations, and the very imperfect knowledge which the best informed in this country at that time had in relation to public works of this character, rendered it almost impossible that they should have formed very correct opinions of the magnitude of the undertaking. But low as were their estimates, it is obvious they were higher than the public expected; for the commissioners, after giving the estimates of the engineers, remark, that "these estimates, it is true, exceed considerably the general expectation, and the commissioners are too well aware of the financial embarrassments of the State, at present, to indulge a well founded hope that immediate measures can be adopted for executing a work of so much importance.

The estimates of the five different routes marked out, were as follows, to-wit:

First route is estimated at.....	\$716,110 71
Second route is estimated at.....	639,542 78
Third route is estimated at.....	668,289 68
Fourth route is estimated at.....	682,610 20
Fifth route is estimated at.....	680,746 96

On the fourth route the supply of water was to be drawn in part from Lake Michigan, and on the fifth, entirely from this source; though upon both plans or routes the deep cut of our present plan must have been encountered.

The canal, as estimated above, would have been two feet in depth, and twenty in width, less than our present canal.

The guages of the different streams from which a supply of water would have been drawn, are given as follows, to-wit:

Des Plaines river at Cache island.....	117,000 feet per hour.
Du Page " "	114,000 " "
Aux Sable " "	60,000 " "
Fox " "	450,000 " "

The engineers remark in relation to these guages, that the "results are predicated upon the present stage of water," and that the quantities may sometimes be lower.

From the foregoing extracts it is plain that no difficulty was anticipated in relation to a cheap supply of water for the canal. If the streams on the route would not afford sufficient water, it would cost no more to procure a never-failing supply from Lake Michigan than from these sources.

The surveys of the canal route by the United States engineers in 1830 and 1831, seem to have been made more to ascertain the practicability of the work and the general character of the route, than with a view to obtain data for a particular estimate of cost. In fact, I believe, that no estimate of the cost of

the work was submitted until the summer of 1834, at least I have never seen one of an earlier date. Gen. Gratiot submitted his estimate in June, 1834, of the cost of constructing a steamboat canal from Chicago to the mouth of the Little Vermilion river. The dimensions were as follows, to-wit:

For the first twenty-seven miles from the lake, or to the running out of the lake level, the canal, except two miles, is one hundred feet wide and ten feet deep. The remaining two miles to be distributed in short sections, at convenient distances, "to be two hundred feet wide, to accommodate boats while detained in changing cargoes without interruption to the navigation." The remaining distance of sixty-five miles "to be not less than one hundred feet at the surface and six feet deep." The total cost of this canal was estimated at \$4,299,439.81.

The contest in the winter of 1836-7 closed by the passage of a law authorizing the canal commissioners to prosecute the work upon the present plan, but requiring them to procure a skillful engineer from abroad to examine and report whether "a supply of water from sources within the legitimate authority of the State of Illinois," could be procured without resorting to the lake, or, in other words, whether a shallow cut, or high level canal could be supplied with water, and if so, whether enough could be gained to make it for the interest of the State to change the plan which had already been adopted by law, after a considerable portion of work had been placed under contract.

Judge Wright was the eminent engineer whose services were secured by the commissioners, and the substance of his report upon this subject is well known to the public. From the time his report was published until the work was nearly suspended on account of the financial embarrassments of the State, little was said about a change of plan. It was supposed that there was nearly or quite canal property enough to complete it upon the deep cut plan, and so long as the State could procure money to carry on the work, little solicitude was felt as to the plan, though it was still believed by many that it should have been changed, or that the high level should have been adopted at the outset.

It never having been made a part of my duty to investigate this subject, I have hitherto deemed it improper to allude to it in my reports, but at this important crisis in the affairs of the canal, when the work is nearly suspended, the State credit gone, our citizens discouraged, and no hopes entertained of brighter prospects until the completion of this important improvement is rendered certain, I shall present a few facts and conclusions which I believe, may be of some public utility, and which certainly can do no injury to the best interests of the canal.

The length of the canal from Chicago river, or the waters of Lake Michigan to Marseilles is seventy-four miles. The demand for water upon this line, assuming the usual data (as far as adapted to the present work), adopted by experienced engineers in other states, and obtained by actual experiments on several different canals, may be calculated as follows, to-wit:

From section No. 1 to section 64 inclusive, for evaporation and leakage at lock gates, there being no loss by filtration	400	cubic per min.
From Sec. 64 to Marseilles, 47 miles, at 150 cubic feet mile.....	7,050	" "
Lockage water for locks at each end of the line, on plan of the high level.....	2,474	" "

Total demand.....9,924 cubic per min.

It has been proved, by repeated satisfactory experiments, that in an ordinary soil, and for a canal of forty feet wide and four feet deep, an average allowance per mile, for filtration and evaporation, of 100 cubic feet per minute is sufficient. The allowance, at all events, has been considered sufficiently accurate to form the basis of calculation in so many instances, that I have good authority for adopting it in this. But the Illinois and Michigan canal is sixty feet wide at surface and six feet deep, and consequently requires a larger supply of water than a canal of the dimensions above named.

By considering the width at surface, the pressure of the water upon the banks and bottom, whether the canal be formed in excavation or by artificial embankments, we can form a tolerably correct opinion of the necessary quantity of water.

Under all the circumstances it would probably be fair to estimate the average demand at 150 cubic feet per minute for each mile of canal, when any loss by filtration has been estimated. The loss by filtration could occur only from section 64, where the rock cutting becomes less than the depth of water to Marseilles. From Marseilles to the termination the canal receives an ample supply from Fox river.

I have calculated no loss by filtration from Chicago river to section 64, because I have supposed that the canal upon the high level will be sunk so low that the surface of the water, in all cases, will be below the natural surface of the ground, and on a level, for most of the distance, as low as the surface of the DesPlains river. The soil too, and the rock through which the excavations are made, are of such a character that no danger need be apprehended that any water will leak out or be absorbed on this portion of the work. The evaporation is, in reality, almost too small an item to be taken into the account at all, but it is mentioned because it is usually estimated in computing the demand for water upon canals.

But the evaporation upon the whole of our canal, calculating the length at ninety-six miles, and the width at sixty feet, would be but 264 cubic feet per minute, estimating the evaporation during a season of navigation of 240 days to be three feet (which is about the average annual evaporation in this country) or it would be less than three cubic feet per minute per mile.

The leakage at the lock gates will be but a small item, if the work be properly executed, and the allowance made is undoubtedly sufficient.

In calculating the amount of lockage water necessary, I have estimated water sufficient to fill the locks (one of eight and one of ten feet lift) one hundred times in every twenty-four hours. But it is not probable that this amount of water will be necessary for the passage of 100 boats. As nearly an equal number of boats must pass each way during the season of navigation, it is obvious that the chances are nearly equal that a single lock full of water would pass one boat up and another down. Or in other words, it is as likely that two boats will meet passing in opposite directions, as that one will closely follow another going in the same direction. It is, therefore, possible that the quantity of water estimated for 100 lockages across the summit, would be sufficient to pass 150 boats.

Guages of Calumet river by U.

S. Engineers—17,281 per min. by Bucklin, 5,333 per min.

S. DesPlaines river Post & Paul, 1950 by Bucklin 1,000 per min.

S. DuPage river U. S. Engineers, 1665 by Bucklin 6916 per min.

The aggregate minimum discharge of the three rivers would then be shown thus:

Calumet 5,333, DesPlaines 1,000, DuPage 1,665=7,998 cubic feet per minute.

This quantity of water was to supply the filtration and evaporation of seventy-four miles of canal, the necessary lockage water, and the loss at the dams and upon the Calumet feeder. It is, therefore, obvious that there would have been barely a supply for a canal of ordinary dimensions, admitting that the water could be introduced (as it might have been) at the points desired.

The Calumet was guaged on the 17th of May, and was found to discharge 8,296 cubic feet per minute, and again on the 24th of September, when the quantity was 6,137 cubic feet per minute, and still again on the 17th of October, when the discharge was reduced to 5,634 cubic feet per minute.

A very satisfactory measurement of the DuPage was obtained on the 21st of September and the discharge of water was then found to be 2,928 cubic feet per minute.

The construction of the perfectly water tight dam at Juliet, has enabled us to ascertain with precision the quantity of water flowing in the Des Plaines. This river has been nearly dried up; the measurement on the 20th of September showing 338 cubic feet, and on the 21st of the same month 373 cubic feet per minute.

The quantity of water in all these streams continue to diminish till the 1st of November, when the probable quantities would have been about as follows, to-wit:

In the Calumet river.....	5,300	cubic feet per min.
“ Des Plaines river.....	200	“ “
“ DuPage river.....	1,888	“ “
Total	7,300	“ “

The necessary quantity of water to supply the canal from Chicago to Marseilles, is 9,924 cubic feet per minute. This would show a deficiency of 2,624 cubic feet per minute, admitting that all the water could be turned into the canal. There will be some loss at the dam at the Calumet and upon three or four miles of the feeder, and also at the DuPage dam. It would, however, be safe to calculate that there could be introduced into the canal from these rivers the following quantities, to-wit:

From the Calumet river.....	4,500	cubic feet per min.
From the Des Plaines.....	200	“ “
From the Du Page.....	1,600	“ “
Total supply.....	6,300	“ “
Total supply.....	9,924	“ “
Total deficiency.....	3,624	“ “

There would not, it is true, be so large a deficiency except in extraordinary dry seasons, and in most seasons probably none at all.

Were the deep cut plan to be carried out at an average stage of Lake Michigan there would be an abundant supply of water drawn from the lake, not only for navigation, but for water power. There would be no locks to obstruct the passage of boats or lake vessels of good size between Chicago and Lockport. The water power at Lockport and Juliet would be greater and more permanent (at the usual stage of the lake) than it would be upon the shallow cut plan. The navigation of the canal would not be liable to interrupt from breaches in dams or embankments, and the plan is much more magnificent. Besides, if the waters of Lake Michigan do not get through this channel to the Mississippi, there is no other through which they can be conducted, and a great deal will have been said for nothing about mingling the waters of the lakes and with those of the Gulf of Mexico.

In constructing the Illinois and Michigan canal of the dimensions now adopted, reference has generally been had to a future enlargement. Through all the towns and proposed town sites, as Lockport, Juliet, DuPage, Ottawa, etc., the canal is nearly double, and in some instances more than double, the ordinary width. In the deep cutting, the spoil-banks were removed a sufficient distance to leave room for the widening of the canal, and in few instances, if any, would there be any additional damages to be paid for property. However remote the period may be when an enlargement of this work will take place, it is certainly the part of wisdom to provide for it now. That it will be enlarged, sooner or later, there can be no doubt, and also that the Illinois river will be so improved (an indispensable improvement) as to meet the enlarged capacity of the canal.

Disheartened as our citizens now are, and prostrate as the credit of the State at this time is, my views upon this subject may be considered the wild speculations of an enthusiast. But such are the natural resources of the country, that with prudent legislation on the part of our legislators, and industry and frugality on the part of our citizens, this state of things can not

long continue. This great national thoroughfare once completed, and new life will be given to the whole country, and the prosperity of the State secured for all time to come.

All of which is respectfully submitted,

WILLIAM GOODING, *Chief Engineer.*

CANAL OFFICE, LOCKPORT, Dec. 1, 1842.

Following the recommendations of the House Committee on Canal and Canal Lands, the General Assembly enacted the following:

An act to provide for the completion of the Illinois and Michigan canal, and for the payment of the canal debt.

WHEREAS, It has been represented that certain holders of the bonds of this State are willing to advance the necessary funds for the completion of the Illinois and Michigan canal, upon being secured the payment of their said bonds, by a vested lien upon the said canal, lands and revenue; for the purpose therefore, of accomplishing an object so desirable and beneficial to the said bond holders and the State.

SECTION 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly:* That for the purpose of raising a fund for the completion of the Illinois and Michigan canal, the Governor of this State be and hereby is, fully authorized and empowered to negotiate a loan solely on the credit and pledge of the said canal, its tolls, revenues and lands, to be granted to trustees, as hereinafter provided, of one million six hundred thousand dollars for a term not exceeding six years, and at a rate of interest not exceeding six per cent per annum, payable out of the first moneys to be realized from the said canal, tolls and revenues; the payment of interest and reimbursement of principal to be at such place within or without the United States and payable in such currency as may be agreed upon.

Sec. 2. The holders of canal bonds and other evidence of indebtedness of this State, issued for the purpose of aiding in the construction of the Illinois and Michigan canal, or hereafter to be issued for work done, percentage, scaleage or damages shall be first entitled to subscribe to the amount of bonds or other indebtedness held by them, and take the whole of said loan, but, if, within a reasonable time, to be determined by the Governor, any of the said holders of canal bonds or indebtedness shall neglect or refuse to subscribe as aforesaid, the whole of the said loan may be subscribed for and taken by other holders of canal bonds or indebtedness; but if within a reasonable time, to be determined by the Governor, the holders of the said canal bonds or other evidences of indebtedness aforesaid, shall not subscribe for and take the whole of said loan, then and in that case, any other person or persons, body politic or corporate, shall be entitled to subscribe for and take so much of the said loan as may remain unsubscribed for by the holders of said bonds or other evidences of debt aforesaid.

Sec. 3. After the said loan shall be subscribed for as aforesaid, there shall be appointed three discreet persons to constitute a board, to be known by the style and description of the "Board of Trustees of the Illinois and Michigan Canal;" one of the said trustees shall be appointed by the Governor of this State, and the other two shall be elected or appointed by the subscribers to the said loan, or the holders of the certificates authorized by this act, in manner and form as hereinafter mentioned. Whenever any vacancy shall occur in the said board of trustees, either by death or resignation; or from any other cause, said vacancy shall be filled by the Governor or holders of said certificates, to whom belonged the appointment of the trustee whose seat shall have become vacant as the case may be.

Sec. 4. The first election of trustees, by the subscribers to said loan, under this act, shall be held at the canal office at Lockport, at such time as the Governor of this State shall appoint, under the direction of one of the judges of the Supreme Court of this State, who is hereby appointed inspector of the first election, and the two persons then elected as trustees by the said subscribers, and the person appointed trustee by the Governor, shall hold their offices for two years from the time of their said election or appointment and until others are elected.

Sec. 5. Subsequent elections shall be held every two years, at such time and place and under the directions of such persons as a majority of the trustees for the time being, shall, by resolution, to be entered on their minutes appoint, and they shall hold their office for two years and until others are elected in their stead.

Sec. 8. The said board of trustees of the Illinois and Michigan canal, when duly appointed and elected as aforesaid, shall apportion their respective duties among themselves, and so far as is not compatible with this act, shall possess all the powers and perform all the duties conferred upon the Board of Commissioners of the Illinois and Michigan Canal by an act entitled, "An act for the construction of the Illinois and Michigan Canal, approved January ninth, 1836, and the acts supplementary and amendatory thereto, and shall take oath or affirmation, and give bonds with security for the faithful discharge of duties imposed upon them by this act."

Sec. 10. For the purpose of placing in the hands of trustees full and ample security for the payment of said loan authorized by this act, and the interest thereon, as well as securing a preference in the payment of such of the canal bonds and other evidences of indebtedness issued by this State for the purpose of aiding in the construction of the Illinois and Michigan Canal as may be owned by the subscribers to the said loan, the State does irrevocably grant to the said board of trustees of the Illinois and Michigan Canal the bed of the Illinois and Michigan Canal, and the land over which the same passes including its banks, margins, towpaths, feeders, basins, right of way, locks, dams, waterpower, structures, stone excavated and stone materials quarried, purchased, procured or collected for its construction; and all the property, right, title, and interest of the State, of, in, and the said canal, with all the hereditaments and appurtenances thereunto belonging, or in any wise appertaining, and also all the remaining lands and lots belonging to the said canal fund, or which hereafter may be given, granted or donated by the General Government to the State, to aid in the construction of said canal and the buildings and erections belonging to the State thereon situated; the said board of trustees to have, hold, possess and enjoy the same as fully and as absolutely in all respects as the State now can or hereafter could do, for the uses, purposes and trusts hereinafter mentioned; but it is to be understood that all canal lots and lands heretofore sold by the Board of Commissioners upon which moneys are now due, or may hereafter become due, whether the said lands or lots be now forfeited or relinquished, or hereafter become forfeited or relinquished, shall be exempt from the aforesaid provisions of this act and the trustee herein provided to be appointed by the Governor, or any other officer, or officers, having the management of the affairs of the canal, until said trustee be appointed on the part of the State, is hereby authorized and required to settle all accounts due to contractors and others (except for such damages as are hereinafter provided for) by issuing certificates of indebtedness, which together with the certificates of indebtedness, scrip, and acceptances heretofore issued by the said canal commissioners shall be received by said trustee, or other officer, or officers aforesaid in payment of said lots and lands whenever they may be presented for that purpose. The said lands and lots hereby reserved shall within three months after the passage of this act, be appropriated as is provided in the thirteenth section of this act, and sold in accordance with the laws of this State regulating the sale of canal lands.

Sec. 18. This act shall go into effect and the said canal property and assets shall vest in said trustees, as hereinbefore granted, whenever and as soon as the full amount of the said loan shall be subscribed for and the trustees elected as hereinbefore provided; and when this act goes into effect, so much of the acts heretofore passed by the Legislature of this State in relation to the Illinois and Michigan Canal, and the canal lands and property, as conflicts with the provisions of this act, are hereby repealed.

Sec. 19. Whenever the trust created by this act shall have been fully executed by the said trustees, the said canal and canal property that may then remain, shall revert to the State; and the State hereby reserves the right of

paying off the bonds and certificates to be paid to said trustees, and the incidental expenses paid by them, and the interest thereon; and the said trustees shall then resign the said canal, and remaining canal property and assets to the State.

Sec. 20. This act shall be a public act, and shall be liberally construed in all courts of justice, and the State hereby solemnly pledges its faith to supply, by future legislation, all such defects as may be found necessary to enable the said trustees to carry into full effect the fair and obvious intent of this act.

Approved February 21, 1843.

An act supplemental to "An act to provide for the completion of the Illinois and Michigan canal, and for the payment of the canal debt," approved February 21, 1843.

SECTION 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly:* That after the contract for the loan of one million six hundred thousand dollars as contemplated in the act, entitled, "An act to provide for the completion of the Illinois and Michigan canal and for the payment of the canal debt," approved February 21, 1843, shall be duly executed in all respects, as is provided by the terms of the above recited act as modified by the provisions of this act, and the trustees are appointed as is contemplated in said act, the Governor of this State shall execute and deliver, under the seal of state, a deed of trust to the said trustees of all the property and effects mentioned in the tenth section of said act; which said conveyance shall include the lands and lots remaining unsold, donated by the United States to the State of Illinois to aid in the completion of the said canal; to be held in trust as in said act stipulated. And it is expressly provided that the subscribers to said loan may and shall register their bonds or other evidences of indebtedness, upon which they may have made or may hereafter make their subscriptions, within one year after the appointment of trustees. And the said subscribers shall be entitled to priority in the payment of the respective advances to be made by them and the interest thereon, also a priority in the payment of the principal and interest of the bonds or other evidences of indebtedness to be registered by them out of the proceeds of the said trust property, anything in the said act above mentioned to the contrary notwithstanding.

Approved March 1, 1845.

The provisions of the above act having been fully complied with, a meeting was held at the American Exchange Bank of New York on the 27th day of May, 1845, and William H. Swift and David Leavitt were elected trustees by the subscribers to the loans; William H. Swift being by ballot designated as president of the board. (William H. Swift was continued as president of this board until the termination of the trust in 1871.) On the 10th day of June following, his Excellency, Governor Ford, appointed Jacob Fry trustee on behalf of the State of Illinois.

List of Officers and Agents Employed by the Board of Trustees of the Illinois and Michigan Canal.

Names.	Occupation.	Entered service.
William Gooding.....	Chief engineer.....	July 23, 1845.....
Edward B. Talcott.....	Principal & st. engineer.....	" " " " " " " " " " " "
Wm. P. Whittle.....	Resident engineer.....	" " " " " " " " " " " "
John B. Preston.....		" " " " " " " " " " " "
John Van Horn.....	Asst. engineer.....	July 28, 1845.....
John S. Hanchett.....		" " " " " " " " " " " "
M. Benjamin.....	" " " " " " " " " " " "	" " " " " " " " " " " "
Henry A. Garder.....	" " " " " " " " " " " "	" " " " " " " " " " " "
Andrew I. Galloway.....	" " " " " " " " " " " "	" " " " " " " " " " " "
Robert Elder.....	" " " " " " " " " " " "	July 23, 1845.....
A Julius Mathewson.....	" " " " " " " " " " " "	Aug. 11, 1845.....
George W. Green.....	" " " " " " " " " " " "	Nov. 1, 1845.....

List of Officers and Agents—Continued.

Names.	Occupation.	Entered service.
O. P. Gooding.....	Clerk and draftsman....	July 28, 1845.....
Rupell E. Heacock.....	Rodman .....	.. ..
G. D. A. Parks.....	.. ..	.. ..
Geo. W. Washington.....	.. ..	.. ..
Thomas A. Henry.....	.. ..	.. ..
Alexander Wolcott.....	.. ..	.. ..
Geo. W. Green (promoted 1st Nov., '45)....	.. ..	.. ..
Geo. W. Hyde.....	.. ..	Nov. 1, 1845.....
Jerome Lalor.....	Assistant rodman.....	July 28, 1845.....
Samuel D. Clark.....	.. ..	.. ..
Edward C. Gillett.....	.. ..	.. ..
Samuel V. Pierce.....	.. ..	.. ..
Geo. W. Hyde (promoted 1st Nov., '45)....	.. ..	.. ..
Horace W. Simpson.....	.. ..	Aug. 7, 1845.....
James S. Soop.....	Clerk.....	July 28, 1845.....
Joel Manning.....	.. ..	July 10, 1845.....
E. T. Prescott.....	Land agent.....	July 23, 1845.....
D. L. Hough.....	.. ..	.. ..
Robert Stewart.....	Secy. Board of Trustees.	June 20, 1845.....
W. W. Sattonestall.....	Clerk.....	July 23, 1845.....
Timothy O'Mahoney.....	Messenger, etc., to canal office.....	July 28, 1845.....

The following excerpts from the report of the board of trustees for the year ending November 30, 1848, completes this report so far as it relates to the inception, construction, and completion of the Illinois and Michigan canal.

On the 24th of April, the board while in session at Chicago, received a report from the chief engineer, stating that the canal was so far completed as to be in navigable order, that the first boat (the General Fry) had passed over the Summit level from Lockport to Chicago on the 10th of April, and that the first boat which had passed through the entire length of the canal from LaSalle to Chicago (the General Thornton owned by Mr. Isaac Hardy) had arrived at Chicago on the 23d of April.

As a matter of some interest connected with the arrival of this boat, it may be stated that sugar, etc., from New Orleans, brought by the General Thornton to Chicago was received at Buffalo (via Mackinaw), on the 30th April, some two weeks before the first boat had reached Buffalo by the Erie canal.

The chief engineer states that all the work upon the main line of the canal is fully completed according to the original intention of the board, except three inconsiderable items, to-wit: First, some timbers for coping the tow-path wall on the Summit; second, the painting of several bridges and aqueducts; third, the excavation of some 2,500 cubic yards of earth, and the building of 300 cubic yards of work on sections 195 and 197. The whole cost of these is stated at \$3,900. The two first will be finished in the course of the winter, but the last can not be economically done until the water in the Illinois river is low.

All the feeders are completed with the exception of the Calumet, which is the main feeder for the Summit level. Very unusual difficulties have been encountered in the excavation of this line, being for a great portion of the distance through a swamp, the material has been dredged out by means of steam excavations, as it was too soft to remove it by digging in the ordinary method, and hence the delay in its completion. It will be done in February and with the opening of navigation in the spring the waters of the Calumet

river will be discharged upon the Summit level. The following table exhibits the cost of completing the canal and the feeders according to the report of the chief engineer:

Canal proper, including pumping engines, etc.....	\$1,159,652 44
Calumet feeder, work done.....	\$68,397 23
Calumet feeder to be done, estimate.....	23,102 78
	91,500 00
Kankakee feeder.....	84,573 29
Superintendence and contingencies.....	66,527 06
Total cost of completion.....	\$1,401,192 79

From Woodruff's history of Will county: "The project of a ship canal to connect the waters of Lake Michigan with the navigable waters of the Illinois river was first suggested during the war of 1812, by some writer in the Niles Register in 1816. The title to a strip 20 miles wide was obtained of the Indians with a view to such work."

From the Northwest and Chicago, by Rufus Blanchard:

"Previous to 1816 the united tribes of Indians known as Ottawas, Chippewas and Pottawattomies, claimed all the land between Chicago and the mouth of the Fox river. In order to secure undisputed possession of the river between these two points, a treaty was arranged between these tribes and Ninian Edwards, William Clark and August Chouteau, commissioners plenipotentiary of the United States; this treaty was consummated the 24th day of August, 1816, and was signed by the above named commissioners and F. Assikinoek, otherwise known as Black Partridge, chief of the united tribes. The object in securing this strip was to construct a military road to facilitate the building of the proposed ship canal."

From the history of Chicago, by Bross, Book B, 1370, Chicago Public Library:

"At the first session of the Legislature in 1818, Governor Bond brought up the subject of a canal from Lake Michigan to the Illinois river. By an act passed July 14, 1823, a board of canal commissioners was appointed, and in the autumn of that year a portion of the board, with Col. J. Post, of Missouri, as chief engineer, made a tour of reconnoissance, and in the autumn of 1824, Col. R. Paul, an able engineer residing in St. Louis was also employed. Five different routes were surveyed and estimates made of the cost of the canal. The highest estimate was \$716,110.00. In the autumn of 1829 the commissioners came to Chicago, having employed James Thompson to survey and lay off the town. His first map bears date of August 4, 1830.

The beginning of the canal was celebrated July 4, 1836, by nearly the whole city of Chicago going up to Bridgeport on the small steamer George W. Dole, towing two schooners. Dr. Wm. B. Egan delivered the address and the Hon. Theophilus W. Smith began the ditch by throwing out the first shovelful of earth.

LOCKPORT, ILL., March 22, 1871.

Messrs. Hoyne, Horton & Hoyne, Chicago, Ill.

GENTS.:—Yours of the 20th inst., asking for a "certified copy of survey or location of the canal in 1836 and also in 1846 in sections 29 and 30, T. 39 north, range 14 E." I send you herewith a diagram showing the location as you desire, certified by A. J. Matthewson, the engineer who made the survey. The change in the location from the survey of 1836 to that upon which the canal was finally constructed, was made in 1845 (not in 1846) when operations were commenced under the trust, and was authorized by section 13 of the "act to provide for the completion of the Illinois and Michigan canal, and the payment of the canal debt," approved February 21, 1843.

Truly yours,

WILLIAM GOODING.

CHICAGO, July 8, 1837.

Mr. William Gooding, Sec. Illinois and Michigan Canal, Lockport, Ill.

SIR:—We shipped June 29, 1850, per canal boat Friendship, 123,347 lbs. mdse. the property of the United States and consigned to D. D. Mitchell, Supt. Indian affairs, St. Louis. Each package of those goods was marked "U. S." and also with the name of the tribe of Indians for which it was intended. There was at that time some doubt on the part of the collector as to whether these goods should not pay tolls upon the canal, and as we have this season had occasion to ship a much larger lot of similar goods we induced the collector, John H. Singin, to write to St. Louis, and he afterwards wrote to Washington to satisfy himself on the subject and received from the Commissioner of Indian affairs at the seat of government, so explicit and clear a statement as to the ownership of those goods of this year as to induce him immediately to refund the tolls which had been paid on them, upon the ground that by its charter the Ill. and Mich. canal agrees to transport free of tolls all property of the United States. That being the case and the fact being known to us that the goods shipped by us per Friendship as above were in all respects the same kind of property as those upon which the tolls have now been remitted, we ask you to remit the tolls as paid on said shipment of 123,347 lbs. per the canal boat Friendship, July 19, 1850. If any more formal application on our part is necessary we will thank you to advise us what the manner of it should be, and if none other than this is requisite, you will oblige us by remitting to our address a check for the amount due us; in either case an early answer will greatly oblige.

Your obedient servants,

NEELY, LAWRENCE & Co.

LOCKPORT, July 10, 1851.

Messrs. Neely, Lawrence & Co.

GENTS:—Your letter of the 8th inst., relative to the payment of tolls on certain property which passed through this canal in 1850, which you assert belong to the United States, is just received. In reply I would say that there is no question that property which clearly belongs to the United States should be transported upon our canal toll free, and if, through a misapprehension of facts, tolls have been charged and collected in any case of this kind, I will immediately refund the amount upon the proper proofs of the fact being made. I only want such proof to place on file in my office as will satisfy the trustees that you have a right to demand and I to refund the tolls in question.

If you will show this letter to Mr. Arnold, our attorney, and ask him what proof will be necessary on your part, he will doubtless give you the requisite information. It will be necessary to show by whom the tolls were paid or to whom they should be refunded.

Truly yours,

WILLIAM GOODING.

CHICAGO, Feb. 16, 1864.

Wm. Gooding, Esq., Lockport, Ill.

DEAR SIR:—We are negotiating for transportation of a large quantity of oats from here to Nashville in canal boats. They are government property having been bought direct for government under orders from Gen. Allen, U. S. Quarter Master, Louisville. We presume if proper evidence is presented they will pass through canal toll free. Please inform us if we are right in the matter and what vouchers we would require to insure their passage free of toll?

Yours truly,

NORTON & Co.

CHICAGO, March 10, 1864.

Wm. Gooding, Esq., Lockport, Ill.

DEAR SIR:—We have agreed to load on the opening, 24 canal boats with oats for the government—they will be delivered to the agent of the Quarter Master Department here by Messrs. Rumsay Bros. & Co., and the agent of the department ships them direct to the Quarter Master at Nashville.

Will you direct the collectors here and at Lockport (where some of the oats will be) how to proceed in relation to tolls (unless they are already posted). Also, please write us whether this is all satisfactory, as we are guaranteed against tolls and don't want to be delayed when we get to Bridgeport. If the above is not satisfactory, that the oats are the property of the government, what course are we to pursue?

Yours truly,

MATHER CLARY & Co.

CHICAGO, April 14, 1887.

Hon. Isaac Taylor, Pres. Board Canal Commissioners State of Illinois, Peoria, Illinois.

DEAR SIR:—Messrs. Sanger & Moody, of Joliet, Ill., have contracted to transport 6,136 cubic yards of cut stone for the United States Government from Joliet to Kampville, Ill. This stone will pass through the Illinois and Michigan canal and the Henry and Copperas creek locks between this date and the 30th of June next. I wish you would have the kindness to instruct your proper subordinates to allow this stone in charge of the parties named to pass through the various locks on this route free of charge, it being the property of the United States at the time of transit.

Respectfully,

THOS. H. HANDBURY,
Of corps of engineers.

CANAL OFFICE, LOCKPORT, Feb. 4, 1862.

Hon. Wm. A. Hacker, Esq., Pres. Illinois Constitutional Convention.

SIR:—I have received a certified copy of the following resolution to which I respond as far as I am able:

Resolved, That the secretary of the canal board be requested to communicate to this convention the amount of the registered canal indebtedness still outstanding: The number of days each year the State trustee has been employed in the service of the canal board since its creation, as evidenced by the books of said board: Also that he inform the convention whether the State trustee has been allowed a clerk and if so the time for which said clerk has been employed, his duties, name and salary and whether such clerk is paid or has been paid from the treasury of the canal board, or from the State treasury.

Also that he communicate, whether all the accounts, vouchers or other papers belonging to the canal board before the creation of the present board of canal trustees, are still kept in the office of and under the present board; and if they are not, to state what became of them and to specifically describe them so far as it may be in his power.

In reply to the first part of the foregoing resolution I have to state that I have no positive evidence in my office of the precise amount of the canal indebtedness which was registered. All the dividends on the principal have been paid by the trustees of the board in New York, where the dividend books now are. From his accounts, however, upon file here the amount can not vary much from \$3,135,000.

Three dividends on the principal of the registered bonds, etc., have been declared, the two first of ten per cent each, and the last of five per cent making in all twenty-five per cent. The amount paid on account of these dividends up to November 30, 1861, was \$776,765.46, leaving of the registered

debt unpaid, say \$2,358,234.54. I understand that some of this registered canal indebtedness has been paid from the State treasury, but have no means of knowing what amount.

To the second inquiry in the resolution, to-wit: "The number of days each year the State trustee has been employed in the service of the canal board since its creation, as evidenced by the books of said board;" I find it difficult to reply specifically so as not to be misunderstood.

During the whole period that Gen. Fry was an incumbent of the office (which was from the creation of the board of trustees up to the 30th of April, 1837), the construction of the canal was actively prosecuted, and the duties assigned him by the board made it necessary for him to devote considerable of his time to his duties and difficult for him to leave his post for any considerable length of time. The books do not show that he was continuously in the service of the canal board," but as it was necessary for me to consult with him very frequently I know that he was generally to be found in his office.

Col. Oakly succeeded Gen. Fry on the 1st day of May, 1847, about the year before the completion of the canal, and eight days thereafter the offices of the State trustee and secretary of the board were removed to Chicago. The canal was completed in the spring of 1848, and the questions growing out of its construction and the preemption rights of settlers on canal lands (the first sale of which by the trustees was in September, 1848,) occupied considerable time, and the "record" shows that Col. Oakly, during his term of office, was employed in the service of the board 57 days.

Hon. Joseph B. Wells succeeded Col. Oakley the 17th of January 1849, and from that time until the present, the "record" shows that the State trustee has been employed in the service of the canal board only 91 days altogether. This time was occupied during the meetings of the board, but I have no means of knowing how much time was spent elsewhere in its service. The record shows that the board authorized Mr. Wells and Mr. McRoberts, whilst they were incumbents of this office, to attend to certain matters pertaining to canal interests, but I can not say how long they were employed in the performance of these duties.

In reply to the third inquiry in relation to the clerk of the State trustee, I have to say that such a clerk was allowed and his services paid for by the trustees, from July 23, 1845, to April 1, 1853. The salary up to June 1, 1849, was \$1,000 and after that \$800 per annum.

The names of those employed, and the dates of their entering service are as follows:

Names.	Entered service.	Amount of salary.
James L. Loop.....	July 23, 1845.....	\$1,000.00 per annum.....
Frederick Doyle.....	Aug. 17, 1847.....	" " from June 1, \$800
A. I. Galloway.....	July 1, 1849.....	\$300.00
Thos. A. Bradford.....	July 1, 1851.....	" "
C. C. Wells.....	June 1, 1852.....	" " to April 1, 1853.....

I reply to the last inquiry that the State trustee from the commencement of the trust assumed the control of "all the accounts, vouchers and other papers belonging to the canal board before the creation of the present board of canal trustees," except the books and papers belonging to the engineer department which were required for the use of the engineers acting under the trustees.

When the office was removed to Chicago in May, 1847, all the books and papers of the old board of canal commissioners were taken from this office building and I suppose deposited in the office of the State trustee there. Certainly none of them were in the office of the secretary of the board of trustees when I was appointed and took charge of it in November, 1849. When Mr. McRoberts was appointed State trustee, and the office was removed from Chicago to Joliet, and when Mr. Ray, who succeeded him, was appointed,

he sent him a large mass of old books and papers which had formerly belonged to the board of canal commissioners, and I had a small room partitioned off to deposit them in, where they still remain.

From this explanation it will at once be understood that it is impossible for me to say whether "all the accounts," vouchers, etc., which had formerly been taken from here were returned. I can only say that all which were returned are still here. There are daybooks, journals, ledgers, records, land books, vouchers, contracts, and in short all the varieties of books and papers which had accumulated under the administration of the Board of Canal Commissioners.

Very respectfully yours,

WM. GOODING,
Secretary.

CANAL OFFICE, LOCKPORT, Feb. 10, 1862.

Hon. Wm. A. Hacker, President Illinois Constitutional Convention.

SIR:—In my reply of the 4th inst., to certain resolutions of the convention, I overlooked the fact that the canal trustees in their annual report to the Governor for the year 1854, give the amount of the bonds, script, etc., registered, as may be seen by reference to that report.

The amount, instead of being \$3,135,000, as I gave it approximately in my reply, is but \$3,000,760.34, and the trustees as shown by their last report have paid on this account \$776,765.46, leaving \$2,223,994.88 unpaid, without considering any payments (if any were made) from the State treasury. The amount paid is more than the 25 per cent dividends declared, but some items of the principal were paid in full.

I respectfully request that this communication may be taken in connection with my former reply to the "resolutions."

Very respectfully yours,

WM. GOODING,
Secretary.

THE FOX RIVER FEEDER.

The survey of the Fox river feeder was made by William Jerome, civil engineer in charge of the western division of the Illinois and Michigan canal early in 1837, and work of construction was in progress as early as December of the same year. The head of this feeder was at Dayton, in the northeast quarter of section 29, township 34, N. range 4, where the State of Illinois constructed and now maintains a dam across the Fox river and extends a distance of $4\frac{1}{2}$ miles in a southwesterly direction through sections 29-32 and 31 township 34, N. R. 4; section 6, township 33, N. R. 4, and through sections 1 and 2, township 33, N. R. 3, to the center half line N. and S. of section 11, township 33, N. R. 3, where it connects with the main canal at Ottawa, Illinois. The waters and reserve of this feeder as it appears marked in plat book number 3, western division Illinois and Michigan Canal, are as follows, to-wit: The channel is of a width of 60 feet about 1,200 feet north of the main canal, and from this point to the dam at Dayton it appears of a uniform width averaging 40 feet.

The reserve appears to be marked 90 feet wide on both sides of the channel until it reaches the south line of section 29, township 34, N. R. 4. Through section 29 no reserve appears on the plat. Near the center of the southeast quarter of said section 29, and on the west bank of the Fox river appears on the plat to have been located a woolen factory. A few rods below this factory appears the Green's mills and a few rods south of section 29 in township 31, appears the mill of Staddens.

William Gooding, chief engineer, in his report for 1836, says of the feeder:

"Connected with the western division of the canal is the Fox river feeder, 4 miles and 6 chains in length. The site selected for the dam and guard lock

at the head of the feeder is at the head of the Fox river rapids, where Mr. Evan's milldam now stands. The feeder is estimated 40 feet wide at surface, 26 feet wide at bottom and 4 feet deep, and a declivity allowed of 3 inches per mile, but this may be increased as well as the dimensions of the feeder. The fall from top water line of canal to low water of Fox river, where main line crosses, is 37 feet."

There appears to have been much controversy in the past over the question of ownership of the bed and reserve of this feeder. Fox river feeder was constructed by authority of section 8 of an act to amend an act entitled, "An act for the construction of the Illinois and Michigan canal, approved January 9, 1836, approved March 2, 1837," to-wit:

Section 8. "The commissioners shall construct a navigable feeder from the best practicable point on Fox river to the Illinois and Michigan canal at the town of Ottawa, and such basins and lateral canal connecting the Illinois river with said canal at that point, as in their opinion will most enhance the value of the property of the State."

The southwest quarter of section 1, Tp. 33 N., R. 3 east, of Fox river and fraction of southeast quarter same section south of Fox river, and the fractional part of the southeast quarter which lies north of the Fox river, was patented by the State of Illinois in 1830. The east one-half of section 29, Tp. 33 N., R. 4, was patented in 1830. The usual canal reserve of waters and 90 feet on each side appear in the sale of S. E. quarter section 31, Tp. 34 N., R. 4, N. E. quarter section 1, Tp. 33 N., R. 3. Section 2-33-31 and 32-34-4 were or appears to have been government land at the time this feeder was surveyed and the construction commenced. The west fraction of the east half section 6-33-4 appears to have been sold in 1835; the balance of the section appear as sold after the the construction of the feeder was commenced.

Edward B. Talcott, resident engineer, in his report of December 10, 1840, referring to the Fox river dam lock and section of the feeder, says this work was finished in September, 1839; the work was badly damaged by flood in the spring of 1839. Under an arrangement between the acting commissioner and Messrs. Green, Stadden and Donovan, the repairs have been practically made.

The following documents are of interest as bearing upon this question:

"John Reynolds, Governor of the State of Illinois.

To all to whom these presents shall come greeting:

Whereas it appears from certificate of James Campbell, treasurer of Board of Canal Commissioners, that Alfred W. Caverly and James Campbell did on the seventeenth day of November, 1830, purchase of State of Illinois for the sum of \$163.75 the tract of land hereinafter described, that is to say the fractional part of the S. W. $\frac{1}{4}$ of section 1-33-3 which lies east of Fox river and the fractional part of S. E. $\frac{1}{4}$ of section 1 which lies south of Fox river, containing 84 acres, and also the fractional part S. E. $\frac{1}{4}$ section which lies north of Fox river, containing 47 acres, containing in all 131 acres according to the survey made by surveyor Gerard, of the U. S., which said tract of land is part of and parcel of the donation made to the State of Illinois by the United States by an act of congress of the United States. An act to grant a quantity of land to the State of Illinois for the purpose of aiding her in opening a canal to connect the waters of Illinois with those of Lake Michigan. Approved March 2, 1827, and whereas by an act of the General Assembly of said State entitled an act to provide for the construction of the Illinois and Michigan canal, approved January 22, 1829, power is given to the Canal Commissioners to sell the land so granted to the State, and the Governor is required to execute patents to the purchasers. Now know ye that under and by virtue of the power and authority contained in said recited act of General Assembly of Illinois, there is granted to the said Alfred Caverly and James Campbell, their heirs and assigns forever, subject to the rights reserved and secured to the said Canal Commissioners in the said recited act.

In testimony whereof I have caused these letters to be made patent and the seal of the State to be affixed. Done at Vandalia in 10th of January, 1831.

By _____ P JOHN REYNOLDS."

Section 1-33-3. Filed on Sept. 7, 1875, 10 a. m.

PATENT STATE OF ILLINOIS,
TO
ALFRED W. CAVERLY AND MATHEW BREENER }

JOHN REYNOLDS, *Governor State of Illinois.* To all whom these presents shall come. Greeting:

Whereas, it appears from certificate of Jas. Campbell, treasurer of board of canal commissioners, that A. Caverly and M. Breener did on the 20th day of November, 1836, purchase of the State of Illinois, for the sum of \$170.25, the tract of land hereinafter described, that is to say the sw. $\frac{1}{4}$ sec. 1-33-3, containing 137 acres according to survey made by surveyor general of United States which tract of land is part and parcel of the donation made to the State of Illinois by an act of congress of the United States entitled, "An act to grant a quantity of land to the State of Illinois for the purpose of aiding her in opening a canal to connect the waters of the Illinois river with those of Lake Michigan," approved March 2, 1827. And whereas, by an act of the General Assembly of said State entitled, "An act to provide for constructing the Illinois and Michigan canal," approved January 22, 1829, power is given to the canal commissioners to sell the lands so granted to the State and the Governor is required to execute patents to the purchasers.

Now know ye that under and by virtue of power and authority contained in said recited act of General Assembly of State of Illinois there is granted to A. W. Caverly and M. Breener their heirs and assigns the tract of the above described lands. To have and to hold the same with appurtenances to said A. Caverly and M. Breener, their heirs and assigns forever, subject to the rights reserved to said canal commissioners in the 10th section of said last recited act.

In testimony whereof I have caused these letters to be made patent and the seal of the State to be affixed. Done at Vandalia this 10th day of January, 1831, and of Independence of U. S. the 55th.

[Signed.]

JOHN REYNOLDS,
Governor.

A. R. FIELDS,
Secretary of State, Fil.

WHEREAS, The board of commissioners of the Illinois and Michigan canal in surveying different routes for "a navigable feeder, from the best practicable point on the Fox river to the Illinois and Michigan canal at the town of Ottawa, and such basins or lateral canal connecting the Illinois river with said canal at that point, as will in their opinion most enhance the value of the property of the State," pursuant to an act entitled, "An act to amend an act entitled, 'An act for the construction of the Illinois and Michigan canal,'" approved January 9, 1836, have surveyed one route passing over the lands and premises of the subscribers.

Now, therefore, we the subscribers for the purposes of encouraging the construction of said feeder, as also said canal and also for the application of water for manufacturing purposes for the use of the State or person claiming by purchase or otherwise under the State, and as an inducement for determining on such route and location, for said feeder and basins as will pass over or otherwise benefit our lands and premises, do hereby absolutely release, acquit and discharge the people of the State of Illinois and the board of commissioners of said canal, of and from all damages which we may sustain or might claim in consequence of the construction of said feeder and basins or their or either of their fixtures and appendages of whatsoever kind at, on, or through our lands and premises and of and from all claims and demands for or on account of any lands, waters streams that may be entered upon taken or appropriated for the construction and use of the said feeder and basins, and their fixtures and appendages, provided, however, that these presents be understood with this limitation, viz: That the subscribers forbear to relinquish and hereby reserve to themselves whatever claim or right they may have acquired to one-fourth part of the water that may flow in the Fox river,

diminished as that quantity may chance to be, in the just measure of its proportions by the leakage, evaporations, etc., necessarily incident to such good and workmanlike dam and lock structure as shall be deemed requisite for the said feeder and basins, and useful to the State, and after the necessary quantity has been drawn out for the purposes of the navigation of the said canal, but agreeing that in the application and use of said fourth part as aforesaid, the same shall be drawn out of the said feeder within seven-eighths of a mile from the head of the guard lock, according as and in the manner to be directed by the said commissioners or other authorized agent.

This reservation being subject to the further limitation that it shall not at any time authorize the subscribers even within the quantity of said proportion, to reduce the water of the said Illinois and Michigan canal during the season of navigation below the depth of six feet, which only shall be done by the permission of some authorized agent of the State. They, the said subscribers hereby relinquishing to the people of the State of Illinois for the reasons and purposes assigned as aforesaid all and whatever claim they may have to the residue and all other portions or proportions of the waters of the said Fox river beyond and above the one-fourth part reserved as aforesaid and they do hereby acquit and discharge the people of the said State of Illinois and the board of commissioners of the said canal of all liability whatsoever for the consistent use and exercise of rights and powers herein declared: *Provided*, if the board of commissioners shall alter or change the dimensions of said feeder as now located the said board are to pay said subscribers or either of them such damages as they may sustain in consequence of said change. In witness whereof we have hereunto set our hands and seals this 5th day of June in the year of our Lord 1838.

JOHN GREEN. (SEAL.)
WM. STADDEN. (SEAL.)

Signed, sealed and delivered in the presence of—

GILES SPRING,
JAMES FENNY.

State of Illinois, }
Will County, } ss.

This day personally appeared before me, Chester Ingersoll, one of the justices of the peace within and for the County of Will, John Green and William Stadden, personally known by me to be the persons who executed the within deed and severally acknowledged before me that they executed the within deed for the use and purposes therein expressed.

Given under my hand and seal this nineteenth day of June, A. D. 1839.

CHESTER INGERSOLL, J. P. (S. S.)

Geo. H. Norris Estate. }
Deed. }
Ottawa Hydraulic Co. }

Know all men by these presents that we, Geo. H. Norris and wife, in consideration of the sum of \$6,000 paid by O. H. Co., all of La Salle county, in equal: $\frac{1}{4}$ to Wm. H. Leshman, L. Leland, J. V. Hoess and to me the said Norris, for whom the said Geo. Norris hold in trust the tracts of land therein-after described, have given and granted and by these presents do give and grant unto said O. H. Co. full power to license and authority to divert all the water flowing Fox river over South E. Fr. $\frac{1}{4}$ N. & S. of said river of Sec. 1-33-3 and over by the margin of E. Fr. of the S. W. $\frac{1}{4}$ of the same Sec. unto the Ill. and Mich. canal and lateral canal and passing at Ottawa for the purpose of creating a surplus of water at Ottawa to be or band by the said company for propelling machinery and for such other purposes as the said company shall see fit, the said O. H. Co. having by lease bearing date 24th day 1852 leased of the Trustees of the Ill. and Mich. canal all of the surplus water which may be introduced into said canal of

lateral canal and basin through Fox river feeder, to have and to hold to the said H. D. Co. its assigns forever, the grant, license and authority aforesaid.

In witness whereof the parties of the first part have hereunto set their hands and seal the 28th day of July, A. D. 1852.

GEO. NORRIS.

Geo. W. Norris and wife
to deed
Theo. Morrison.

April 27, 1854.
B. 38, P. 300.

Theo. Morrison }
to B. Lease
O. H. Co. }

No grant or license is hereby given or granted to said H. Co. or its assigns to make any entry into, in or upon said lands for the purpose of diverting or using said water except upon such portions as has been claimed and set apart by said trustees of Ill. and Mich. canal for the right away through and over said lands for said Fox river feeder.

Dec. 26, 1853.
B. 38, 301.

**SURVEY OF FOX RIVER FEEDER FOR J. V. A. HOES, GEO. E. WALKER AND
OTHERS—MADE JULY 23RD AND 25TH, 1857.**

This survey was made to ascertain the fall or declivity of said feeder, its capacity for the discharge of water and its obstructions, if any. I find that said feeder is five miles long and its fall from the coping of dam to top of lock gate at south side of main canal in the city of Ottawa is one foot and seventy-eight hundredths.

Most of the way it is full of grass at this season of the year which dams it up, as for example, the first mile from the dam is wide and deep and the fall is less than two-tenths, then grass in feeder with less depth and narrow, most of the way from here to Ottawa (that is four miles), is from 35 to 40 feet wide and from 3.3 to 4 feet deep in center with angles filled with mud, and grass nearly its whole width. Its capacity I think would be increased 25 per cent by cleaning out angles and bars and keeping free from grass. The banks in some places are too low to carry all the water that could be drawn had it free passage.

ROBERT WILSON, C. E.

NOTE: Fall from dam to lock, 1.78 July 25th, 1857; fall from section W in dam, 3.31 July 25th, 1857; fall from lock to lock, 3.12 July 25th, 1857.

R. WILSON.

See abstract of 1-33-3; 6-33-4; 32-34-4; 29-34-4, on file in canal office at Lockport. All patents of canal lands issued by the Governor of Illinois have the following clause or reserve in them: Section 10, "An act of 1829, to wit: 'And to enable said commissioners to accomplish the object to enter and take of and use any lands, water, streams necessary for the prosecution of the work intended by this act.'"

KANKAKEE FEEDER.

A navigable feeder from the Kankakee river was surveyed in 1845 and ordered constructed in 1846. The width to be 40 feet at top water line, 26 feet at bottom, 4 feet deep except at lower end where the depth was to be 5 feet. The slope to be 2 to 1 raised 3 feet above top water line—declivity 2 inches to the mile. This feeder was completed in 1848. The termination of the feeder was at a point on the canal 1,820 feet S. E. of the N. W. corner of section 31, Tp. 34 N. R. 9, passes in a southwest course across the Du Page river where it enters section 36, Tp. 34 N. R. 8; thence S. W. 1,056 feet to the center section line 538 feet west of the east line of the section; thence south to a point 792 feet north of the south line of section 36; thence southeast entering section 31-34-9 again at a point 264 feet north of its southwest corner:

crossing this corner it then passes through sections 6, 4 and 5 to a point near the center of the southeast quarter of section 9; all in Tp. 33 N. R. 9 whence a dam was constructed across the Kankakee river and from which it received its supply of water.

■ The 90 foot reserve was surveyed in 1848 by Artemus J. Mathewson, a plat was made of the feeder and reserve and appear in the plat book number 2, Canal Records.

The total cost approximated very nearly to \$50,000. The following extracts from the Chief Engineer's report on the Kankakee, Calumet and other feeders (other feeders not constructed) are of interest as bearing upon this question.

CANAL OFFICE, LOCKPORT, April 20, 1846.

To the Board of Trustees of the Illinois and Michigan Canal.

GENTLEMEN:—The Secretary of our board has submitted to me the following order to which I have the honor to reply:

“Ordered, That the Chief Engineer be requested to report to the board the results of the surveys of the several feeders which have been made since the adjournment of the board on the 24th July last, together with the estimated cost of constructing each feeder; also that he communicate his opinion in reference to the most advantageous disposition to be made of the several feeders, and the best mode of supplying the different levels with a sufficiency of water for the purpose of navigation.”

The surveys of the feeders were commenced on the 14th of July last, and finished on the 6th day of November under the immediate direction of the principal assistant, who was aided by Messrs. Benjamin, Mathewson and Elder, Assistant Engineers. Mr. Elder, however, was not called into the service, until the surveys of the Calumet had been completed.

Two feeders from the Kankakee river were surveyed; one commencing at the dam near Wilmington and terminating near lock No. 6 on the main line of canal, and the other at Goose Island, terminating at the main line nearly opposite the upper part of the town of Kankakee. The feeder from Wilmington would be received into the canal on the Joliet level, and the other upon the Dresden level; the former being 10.43 and the latter 4.44 miles in length.

The feeder from Wilmington is rendered expensive by the necessity of constructing more than a mile of it where the base of the tow path will be in the river and the outer slope will require protection, and also by the difficulty of procuring suitable earth for embankment for about three miles of the distance, and the expensive nature of the embankment across the valley of the Des Plaines.

The aqueduct across the Des Plaines on this line will also be an expensive structure. The estimated cost of this feeder is \$159,401.52.

The lower Kankakee feeder commences at a point very favorable to the construction of a permanent dam, and the route passes over ground well adapted to the cheap and permanent construction of the work, until it reaches the Des Plaines river which must be crossed by an aqueduct that will form much the most expensive part of the work. Every part of this feeder, however, can be made permanent at a very moderate cost, the whole estimate amounting to but \$48,363.68.

The feeders are all intended to be navigable and will be 40 feet wide upon the surface of the water, 26 feet wide upon the bottom, and 4 feet deep, except lower Kankakee feeder, in which the water is intended to be 5 feet deep. The slopes of the banks will be two to one, and they will be raised 7 feet above bottom or 3 feet above the top water line. A declivity of 2 inches per mile is given on each of the feeders.

The general character of the work for the structures upon the feeders is of a cheaper kind than that upon the main line of canal. No cut stone work is estimated, and no expense added except to give permanence and durability.

But still the work will not be of so permanent and durable a character as that upon the canals; and consequently the cost of repairs and renewals of structures will be proportionally larger.

There will be no lockage upon the Calumet or either of the Kankakee feeders.

The annexed abstract will show the cost in detail of the different feeders, surveyed and estimated, and the accompanied maps and profiles will represent more fully the precise character and location of the different lines."

The Kankakee feeder has not been used for several years. The aqueduct that carried the water over the Des Plaines and Du Page rivers has long since gone to decay. There are, however, over 125 acres of good land used for this feeder that now belongs to the State of Illinois.

DU PAGE FEEDER.

The Du Page feeder was constructed in section 33, Tp. 35 N., R. 9, upon canal lands which were reserved from sale and comprise 14.93 acres, and a perpetual easement upon 3 more acres to be located in the southwest quarter of said section, whenever the canal trustees or their successors might select. The embankment extending from the dam up the river 27 chains or 1,782 feet where it connected with high ground upon the river bank. From the dam the channel extended south through the northwest quarter of section 4, Tp. 34 N., R. 9, 1,056 feet and of a width of a 100 feet.

ABSTRACT OF COST.

24 chains of grubbing at \$5.00.....	\$120 00
2,400 cu. yards of mucking at 8c.....	192 00
44,258 cu. yards excavation at 8c.....	3,540 64
22,953 cu. yards double embankment at 13c.....	2,983 89
12,309 cu. yards single embankment at 10c.....	1,230 90
Dam	3,520 00
Superintendent and contingent, 15 per cent.....	1,733 11
	\$13,320 54

This feeder has long been in disuse and comprises 20.15 acres; the title being in the State of Illinois. This feeder and its reserve appear in plat book No. 2, Canal Records.

CALUMET FEEDER.

The fourth section of the canal law of 1837, requires the board of commissioners to cause a survey and estimate to be made as soon as convenient, of the route of a canal diverging from the main trunk through the Saganaskee swamp and Grassy lake to intersect the Calamie river at the most practicable point; see page 140, of this report. In compliance with this requisition a party under direction of Lieut. Ward B. Burnett, was ordered to that duty as early as preparations could be made; see report of William Gooding, chief engineer, page 164, of this report.

The first reference to the use of the waters of the Calamie river as a supply for the Illinois and Michigan canal, is found in the reports of James M. Bucklin, engineer, under date of December 18, 1830, at an estimated cost of \$160,-699.00; see page 73, of this report, and in the reports of Edward Roberts, Gresham, Jayne and Charles Dunn, canal commissioners under date of December 27, 1830; page 75, of this report. The second reference is from J. M. Bucklin under date of June, 1831; page 42, of this report. Third reference same authority, under date of November 21, 1841; page 45, of this report. Fourth reference is from the same authority in his exhaustive report of January 1, 1833; page 87, of this report. The fifth reference is from the report of the Committee on Canal and Canal Lands under date of February 15, 1837, page 133, of this report.

Lieut. Burnett completed this survey and made a full report thereof; see pages 222 to 225 of this report.

A plat of the Calumet feeder with the 90 foot reserve marked thereon, together with a plat of all overflowed land in the Calumet region, can be found in plat book 1 of canal records.

Special reference is made to section 15 of an act to amend the several laws in relation to the Illinois and Michigan canal, approved February 26, 1839; which provides for the construction of the canal diverging from the main trunk and is commonly called the old Calumet feeder. The said canal shall be deemed and considered as part and parcel of the Illinois and Michigan canal and the laws and regulations adopted with reference to the construction thereof. The duties of canal commissioners, the making and executing contracts, shall be held and deemed applicable to the canal directed to be constructed by this act.

In 1837 Benj. Wright, a distinguished engineer, was employed by the canal commissioners to survey and examine the route of the canal as then established with a view of ascertaining whether there was a sufficient quantity of water within the legitimate authority of the State of Illinois for use to supply a canal as contemplated on the Summit level. In his report of October 23, 1837, Mr. Wright uses the following language: The Calumic takes its source in the State of Indiana, and by a bend passes into this State and its present entrance into Lake Michigan is within this State. It is, however, well known that its former entrance into the lake was in Indiana and that it often has a discharge of its waters at the latter place in a particular stage of the waters of the lake; see page 174 of this report for further reference.

The Calumic region was again surveyed in 1845 by the following corps of engineers and assistants: Edward B. Talcott, principal assistant engineer; M. Benjamin, assistant engineer, A. J. Mathewson, surveyor, with necessary rodmen, chainmen, axmen and diggers. This survey was commenced August 11, 1845. The construction of the feeder was commenced immediately thereafter and completed in 1848. Under this survey a dam was constructed across the Calumet river; the site of the dam being sixty chains above the mouth of Stoney creek, the width of the river at this point was found to be 290 feet from bank to bank. Distance by left bank of the Calumet from the dam to the State line 12 miles, to be lessened $\frac{1}{2}$ mile by the plan of improvement. The feeder extended from the dam through Portland (now Rock Island) crossing the following named tracts of land, to-wit:

LANDS CROSSED BY THE CALUMET FEEDER.

NE fr. $\frac{1}{4}$ sec. 6, tp. 36, range 14; laid out in town lots; called Portland.
 E $\frac{1}{2}$ NW $\frac{1}{4}$ sec. 6, tp. 36, range 14.
 SW $\frac{1}{4}$ sec. 31, tp. 37, range 14; laid out in town lots; called Portland.
 E $\frac{1}{2}$ SE $\frac{1}{4}$ sec. 36, tp. 37, range 13.
 W $\frac{1}{2}$ SE $\frac{1}{4}$ sec. 36, tp. 37, range 13.
 E $\frac{1}{2}$ SW $\frac{1}{4}$ sec. 36, tp. 37, range 13.
 NW $\frac{1}{4}$ sec. 36, tp. 37, range 13.
 E $\frac{1}{2}$ NE $\frac{1}{4}$ sec. 35, tp. 37, range 13.
 E $\frac{1}{2}$ SE $\frac{1}{4}$ sec. 26, tp. 37, range 13.
 W $\frac{1}{2}$ SE $\frac{1}{4}$ sec. 26, tp. 37, range 13.
 SW $\frac{1}{4}$ sec. 26, tp. 37, range 13.
 E $\frac{1}{2}$ SE $\frac{1}{4}$ sec. 27, tp. 37, range 13.
 NE $\frac{1}{4}$ sec. 27, tp. 37, range 13.
 NW $\frac{1}{4}$ sec. 27, tp. 37, range 13.
 SW $\frac{1}{4}$ sec. 22, tp. 37, range 13.
 SE $\frac{1}{4}$ sec. 21, tp. 37, range 13.
 NE $\frac{1}{4}$ sec. 21, tp. 37, range 13.
 SE $\frac{1}{4}$ sec. 16, tp. 37, range 13.
 SW $\frac{1}{4}$ sec. 16, tp. 37, range 13.
 NW $\frac{1}{4}$ sec. 16, tp. 37, range 13

E $\frac{1}{2}$ E $\frac{1}{2}$ NE $\frac{1}{4}$ sec. 17, tp. 37, range 13.
 W $\frac{1}{2}$ E $\frac{1}{2}$ sec. 17, tp. 37, range 13.
 E $\frac{1}{2}$ W $\frac{1}{2}$ sec. 17, tp. 37, range 13.
 W $\frac{1}{2}$ W $\frac{1}{2}$ sec. 17, tp. 37, range 13.
 NW $\frac{1}{4}$ sec. 18, tp. 37, range 13.
 SE $\frac{1}{4}$ sec. 14, tp. 37, range 12.
 E $\frac{1}{2}$ SW $\frac{1}{4}$ sec. 14, tp. 37, range 12.
 SE NE and SE NW section 22, tp. 37, range 12.
 W $\frac{1}{2}$ NE and W $\frac{1}{2}$ NW sec. 22, tp. 37, range 12.
 NE $\frac{1}{4}$ sec. 20, tp. 37, range 12.
 S $\frac{1}{2}$ sec. 18, tp. 37, range 12.
 NE $\frac{1}{4}$ sec. 14, tp. 37, range 11; town lots laid out by Wm. Barchu & Hiram Pearsons.

Schedule of Lands Lying Adjacent to the Calumet River, above the Dam and Flowed in Part, or Wholly, by the Pond Raised by Said Dam.

Part of Section.	Township.	Range.	Acres sold by Gov.	Acres of dry land.	Acres flowed.
N. E. $\frac{1}{4}$ sec. 1.....	36 N.	13 E.	160	138.82	21.18
N. W. $\frac{1}{4}$ sec. 1.....	"	"	160	141.43	18.54
N. W. $\frac{1}{4}$ sec. 6.....	"	14 E.	160	136.45	23.55
N. E. fr. sec. 6.....	"	"	160	124.69	35.31
N. E. fr. of S. E. fr. $\frac{1}{4}$ N. of the Indiana boundary, sec. 6.....	"	"	35.71	15.76	19.95
N. fr. of N. E. fr. $\frac{1}{4}$ S. of Indiana boundary, sec. 6.....	"	"	20.25	19.48	0.77
S. fr. N. E. $\frac{1}{4}$ fr. S. of Indiana boundary, sec. 6.....	"	"	6.25	8.78	.....
N. E. fr. S. E. fr. $\frac{1}{4}$ S. of Indiana boundary, sec. 6.....	"	"	38.78	38.63	0.15
S. fr. S. W. $\frac{1}{4}$ N. W. fr. $\frac{1}{4}$ sec. 5.....	"	"	39.92	.....	.....
N. W. fr. S. W. fr. $\frac{1}{4}$ sec. 5.....	"	"	19.30	18.41	0.80
S. E. fr. S. W. fr. $\frac{1}{4}$ sec. 5.....	"	"	25.51	.....	.....
N. W. fr. S. W. fr. $\frac{1}{4}$ sec. 5.....	"	"	57.77	52.47	1.80
N. E. fr. N. W. fr. $\frac{1}{4}$ S. of river, sec. 8.....	"	"	23.18	26.34	1.84
N. E. fr. N. W. fr. $\frac{1}{4}$ N. of river, sec. 8.....	"	"	5.33	4.99	0.34
S. fr. of N. W. of N. E. $\frac{1}{4}$ sec. 8.....	"	"	29.43	24.34	5.09
S. fr. of N. E. of N. E. $\frac{1}{4}$ sec. 8.....	"	"	23.24	18.82	4.52
N. fr. of N. E. fr. $\frac{1}{4}$ sec. 8.....	"	"	14.35	11.99	2.36
N. W. fr. of N. W. fr. $\frac{1}{4}$ sec. 9.....	"	"	37.21	36.77	0.44
S. W. fr. of N. W. fr. $\frac{1}{4}$ sec. 9.....	"	"	53.54	47.22	6.32
N. fr. of S. E. $\frac{1}{4}$ sec. 9.....	"	"	21.28	.....	.....
N. E. $\frac{1}{4}$ of S. W. $\frac{1}{4}$ sec. 9.....	"	"	37.93	35.50	2.43
S. W. $\frac{1}{4}$ of S. W. $\frac{1}{4}$ sec. 9.....	"	"	39.69	38.89	0.80
N. W. fr. of S. E. fr. $\frac{1}{4}$ sec. 9.....	"	"	60.25	48.40	1.85
N. fr. of S. E. $\frac{1}{4}$ of S. E. fr. $\frac{1}{4}$ sec. 9.....	"	"	17.45	.....	.....
S. fr. of S. E. fr. $\frac{1}{4}$ sec. 9.....	"	"	31.23	25.86	5.35
N. fr. of S. W. of S. W. fr. $\frac{1}{4}$ sec. 10.....	"	"	35.74	35.67	0.07
S. fr. of S. W. of S. W. fr. $\frac{1}{4}$ sec. 10.....	"	"	1.89	0.53	1.36
W. fr. of N. W. fr. $\frac{1}{4}$ sec. 15.....	"	"	49.17	42.61	6.56
N. E. fr. N. W. fr. $\frac{1}{4}$ sec. 15.....	"	"	51.33	47.60	3.73
S. E. fr. N. W. fr. $\frac{1}{4}$ sec. 15.....	"	"	51.85	47.69	4.16
N. W. fr. S. W. fr. $\frac{1}{4}$ sec. 15.....	"	"	37.16	19.89	17.27
S. W. fr. S. W. fr. $\frac{1}{4}$ sec. 15.....	"	"	40.00	35.84	4.16
S. fr. N. E. $\frac{1}{4}$ of S. W. $\frac{1}{4}$ sec. 15.....	"	"	27.00	15.74	8.26
N. W. fr. S. W. fr. $\frac{1}{4}$ sec. 15.....	"	"	7.80	.....	.....
S. fr. N. W. $\frac{1}{4}$ of S. E. fr. $\frac{1}{4}$ sec. 15.....	"	"	27.41	16.67	10.74
S. fr. N. E. $\frac{1}{4}$ of S. E. fr. $\frac{1}{4}$ sec. 15.....	"	"	26.21	23.47	2.74
N. fr. of S. E. fr. $\frac{1}{4}$ sec. 15.....	"	"	14.25	.....	.....
N. fr. of S. W. of S. W. fr. $\frac{1}{4}$ sec. 14.....	"	"	11.95	5.52	6.43
S. fr. N. W. of S. W. fr. $\frac{1}{4}$ sec. 14.....	"	"	28.30	17.33	10.97
S. fr. N. E. $\frac{1}{4}$ of S. W. fr. $\frac{1}{4}$ sec. 14.....	"	"	30.81	17.12	13.69
S. E. $\frac{1}{4}$ of N. W. $\frac{1}{4}$ sec. 14.....	"	"	39.82	39.21	0.71
S. W. $\frac{1}{4}$ of N. E. $\frac{1}{4}$ sec. 14.....	"	"	38.75	37.31	1.44
S. E. $\frac{1}{4}$ of N. E. $\frac{1}{4}$ sec. 14.....	"	"	40.00	34.64	5.36
N. W. fr. S. E. fr. $\frac{1}{4}$ sec. 14.....	"	"	31.51	16.29	15.16
W. fr. of E. $\frac{1}{2}$ of S. E. $\frac{1}{4}$ sec. 14.....	"	"	44.62	39.04	5.58
E. fr. of E. $\frac{1}{2}$ of S. E. $\frac{1}{4}$ sec. 14.....	"	"	25.54	9.52	16.02
S. W. $\frac{1}{4}$ N. W. $\frac{1}{4}$ sec. 13.....	"	"	40.00	37.70	2.30
N. W. $\frac{1}{4}$ of S. W. $\frac{1}{4}$ sec. 13.....	"	"	40.00	34.31	5.69
S. W. fr. of S. W. fr. $\frac{1}{4}$ sec. 13.....	"	"	32.95	23.40	10.55
E. $\frac{1}{2}$ N. W. $\frac{1}{4}$ sec. 23.....	"	"	80.00	72.00	7.97
W. $\frac{1}{2}$ N. E. $\frac{1}{4}$ sec. 23.....	"	"	80.00	70.19	9.82
E. $\frac{1}{2}$ N. E. $\frac{1}{4}$ sec. 23.....	"	"	80.00	60.04	19.96

Schedule of Lands—Concluded.

Part of Section.	Town- ship.	Range.	Acres sold by Gov.	Acres of dry land.	Acres flowed.
W. $\frac{1}{2}$ N. E. $\frac{1}{4}$ S. E. $\frac{1}{4}$, sec. 23.....	36 N.	14 E.	20.00	14.59	5.41
E. $\frac{1}{2}$ N. E. $\frac{1}{4}$ S. E. $\frac{1}{4}$, sec. 23.....	"	"	20.00	8.20	11.80
S. E. $\frac{1}{4}$ S. W. $\frac{1}{4}$, sec. 23.....	"	"	40.00	25.99	14.01
S. part E. $\frac{1}{2}$ S. W. $\frac{1}{4}$, sec. 23.....	"	"	49.00	47.18	1.82
N. part E. $\frac{1}{2}$ S. W. $\frac{1}{4}$, sec. 23.....	"	"	31.00	28.96	2.14
N. part W. $\frac{1}{2}$ S. W. $\frac{1}{4}$, sec. 23.....	"	"	31.00	31.00	.....
W. $\frac{1}{4}$ N. W. $\frac{1}{4}$, sec. 23.....	"	"	80.00	72.03	7.97
W. $\frac{1}{4}$ N. W. $\frac{1}{4}$, sec. 25.....	"	"	80.00	38.27	41.73
E. $\frac{1}{2}$ N. W. $\frac{1}{4}$, sec. 25.....	"	"	80.00	74.06	5.94
W. $\frac{1}{2}$ S. W. $\frac{1}{4}$, sec. 25.....	"	"	80.00	77.30	2.70
E. $\frac{1}{2}$ S. W. $\frac{1}{4}$, sec. 25.....	"	"	80.00	79.95	0.05
S. E. $\frac{1}{4}$, sec. 27.....	"	"	160.00	152.60	*7.50
E. $\frac{1}{2}$ N. E. $\frac{1}{4}$, sec. 34.....	"	"	80.00	79.69	0.41
W. $\frac{1}{2}$ N. E. $\frac{1}{4}$, sec. 34.....	"	"	80.00	74.55	†1.95
S. W. $\frac{1}{4}$, sec. 26.....	"	"	160.00	144.44	18.56
N. W. $\frac{1}{4}$, sec. 26.....	"	"	160.00	140.50	‡15.50
W. $\frac{1}{2}$ of N. E. $\frac{1}{4}$, sec. 26.....	"	"	80.00	55.79	†21.71
E. $\frac{1}{2}$ N. E. $\frac{1}{4}$, sec. 26.....	"	"	80.00	61.69	†15.81
S. fr. $\frac{1}{2}$ N. W. fr. $\frac{1}{4}$, sec. 24.....	"	"	66.19	23.32	42.87
S. E. fr. $\frac{1}{2}$ N. W. fr. $\frac{1}{4}$, sec. 24.....	"	"	71.20	69.18	2.02
N. fr. S. W. $\frac{1}{4}$ N. E. fr. $\frac{1}{4}$, sec. 24.....	"	"	28.84	22.23	6.61
S. E. fr. S. W. $\frac{1}{4}$ N. E. fr. $\frac{1}{4}$, sec. 24.....	"	"	2.10	4.90	0.80
S. E. fr. S. E. $\frac{1}{4}$ N. W. fr. $\frac{1}{4}$, sec. 24.....	"	"	3.60	.....	.....
S. E. fr. $\frac{1}{4}$ N. E. fr. $\frac{1}{4}$, sec. 24.....	"	"	37.06	.....	.....
N. W. fr. S. W. fr. $\frac{1}{4}$, sec. 24.....	"	"	39.91	28.81	11.10
W. $\frac{1}{4}$ S. W. fr. $\frac{1}{4}$, sec. 24.....	"	"	40.00	22.97	**17.03
E. fr. S. W. fr. $\frac{1}{4}$, sec. 24.....	"	"	34.70	32.17	2.53
N. W. $\frac{1}{4}$ S. E. fr. $\frac{1}{4}$, sec. 24.....	"	"	39.90	39.09	0.63
N. fr. N. E. $\frac{1}{4}$ S. W. $\frac{1}{4}$, sec. 24.....	"	"	6.93	3.88	3.05
N. fr. N. E. $\frac{1}{4}$ S. W. $\frac{1}{4}$, sec. 24.....	"	"	27.17	27.13	0.04
N. fr. S. W. $\frac{1}{4}$ S. W. fr. $\frac{1}{4}$, sec. 20.....	"	15 E.	21.56	20.87	0.69
N. fr. S. E. $\frac{1}{4}$ S. W. fr. $\frac{1}{4}$, sec. 20.....	"	"	30.00	28.63	1.37
N. fr. S. W. fr. $\frac{1}{4}$, sec. 20.....	"	"	18.37	4.99	13.58
N. W. $\frac{1}{4}$ N. W. $\frac{1}{4}$, sec. 29.....	"	"	40.00	39.79	0.21
N. E. fr. $\frac{1}{4}$ N. W. fr. $\frac{1}{4}$, sec. 29.....	"	"	35.12	34.58	0.54
N. fr. N. E. fr. $\frac{1}{4}$, sec. 29.....	"	"	22.24	18.83	3.41
S. fr. N. E. fr. $\frac{1}{4}$, sec. 29.....	"	"	39.49	29.45	10.01

* Less 3 in creek.

† 7 in creek.
‡ 4 in creek.‡ 2.50 in creek.
‡ 2.50 in creek.

** Less 2.85 in creek.

To the best of my knowledge and belief the above statement, made from actual survey, is correct.

A. J. MATHEWSON, *Surveyor*.

Chicago, November 24, 1849.

List of names of persons relinquishing lands to the I. & M. Canal and lands relinquished on Calumet Feeder.

I. Case and W. H. Brown.....	N. E. $\frac{1}{4}$, 34.....	36N	14 E
W. B. Egan.....	Blocks 25-26, pt. sub-div. W. $\frac{1}{2}$, N. E. $\frac{1}{4}$, 17	39N	14 E
Ira Gardner.....	S. W. 26.....	36	14
Seth Thomas.....	N. W. 26.....	36	14
Seth Thomas.....	S. W. fr. $\frac{1}{4}$, 13.....	36	14
Rehoboth Society, 1 acre.....	S. W. 15.....	36	14
Amy Robinson.....	E. $\frac{1}{2}$ S. E., 36.....	37	13
Mathew Gowens, fr. ref. to deed.....	S. E. 15.....	36	14
Henry DeYoung.....	S. W. 15.....	36	14
Simon Benshop.....	fr. on S. side of river, S. E., 15.....	36	14
John Lawson.....	N. E. fr. $\frac{1}{4}$, 19.....	36	15
R. B. Heacock.....	E. $\frac{1}{2}$ N. E., 1.....	36	13
R. B. Heacock.....	N. W. $\frac{1}{4}$, 6.....	36	14
R. B. Heacock.....	N. E. $\frac{1}{4}$, 1.....	36	13
R. B. Heacock.....	N. W. $\frac{1}{4}$, 6.....	36	14
Niels Wibye.....	E. 66 $\frac{35}{100}$ acres of W. fr. of S. E. $\frac{1}{4}$, 19.....	36	15
John Killervinger.....	N. W. $\frac{1}{4}$, 15.....	36	14

Lands Relinquished—Concluded.

I. I. Rinker.....	W. $\frac{1}{2}$, N. E. $\frac{1}{4}$, 26.....	36	14
Wm. Gowens.....	W. $\frac{1}{2}$, S. E. $\frac{1}{4}$, 15.....	36	14
Thompson Shepard.....	N. E. $\frac{1}{4}$, 24.....	36	14
P. P. Booe.....	N. fr. of S. W. $\frac{1}{4}$, 14.....	36	14 fr
Andrew Anderson.....	E. 40 acres of N. fr. of N. W. $\frac{1}{4}$, 19.....	36	15
D. O. Robinson.....	E. $\frac{1}{2}$, S. E. $\frac{1}{4}$, 36.....	37	13
D. O. Robinson.....	S. E. fr. S. W. fr. of N. W. fr. $\frac{1}{4}$ of 19.....	36	15
Holstein Serrison.....	40 acres N. fr. S. W. $\frac{1}{4}$, 20.....	36	15
Holstein Serrison.....	E. fr. S. E. $\frac{1}{4}$, 19.....	36	15
John H. Kenzie.....	N. W. $\frac{1}{4}$, 34.....	36	14
Hannah Hurlburt.....	W. $\frac{1}{2}$, N. W. $\frac{1}{4}$, 25.....	36	14
Hannah Hurlburt.....	E. $\frac{1}{2}$, N. E. $\frac{1}{4}$, 26.....	36	14
Wm. Young.....	Sec. 16.....	36	14
Hannah Hurlburt and W. B. Egan.....	E. $\frac{1}{2}$, N. E. $\frac{1}{4}$, 23.....	36	14
Antye Wagmaster.....	E. $\frac{1}{2}$, N. W. $\frac{1}{4}$, 25.....	36	14
S. W. Peck.....	S. W. fr. S. W. $\frac{1}{4}$, 20.....	36	15
S. W. Peck.....	S. W. $\frac{1}{4}$, 10.....	36	14
S. W. Peck.....	S. W. fr. $\frac{1}{4}$, 9.....	36	14
Cornelius Arutye.....	fr. S. E. $\frac{1}{4}$, 9.....	36	14
Cornelius Artuye.....	E. $\frac{1}{2}$, S. W. $\frac{1}{4}$, 9.....	36	14
John Van Ehle.....	S. W. $\frac{1}{4}$, 15.....	36	14 fr
John Van Ehle.....	S. E. fr. $\frac{1}{4}$, 9.....	36	14 fr
Roel Van Vearen.....	N. E. $\frac{1}{4}$, 15.....	36	14
Roel Van Vearen.....	all N. W. $\frac{1}{4}$, 15, on E. side Calumet river.....	36	15
Geo. Dalton.....	S. fr. N. E. fr. $\frac{1}{4}$, 29.....	36	15
Geo. Dalton.....	N. E. fr. N. W. $\frac{1}{4}$, 29.....	36	15
Geo. Dalton.....	S. fr. S. W. $\frac{1}{4}$, 20.....	36	15
Geo. Dalton.....	N. fr. N. E. $\frac{1}{4}$, 19.....	36	15
Geo. Earle.....	Secs. 13-14.....	36	* 8
Geo. Earle.....	N. W. $\frac{1}{4}$, 32.....	36	* 7
Andrew Benson.....	N. E. $\frac{1}{4}$, N. W. $\frac{1}{4}$, 19.....	36	† 15
D. H. Pierce.....	W. $\frac{1}{2}$, N. $\frac{1}{2}$ of E. $\frac{1}{2}$ of S. E. $\frac{1}{4}$, 23.....	36	14
A. Holden.....	N. W. fr. $\frac{1}{4}$, 24.....	36	14
Luther Higby.....	W. $\frac{1}{2}$, N. E. $\frac{1}{4}$, 23.....	36	14
Luther Higby.....	E. $\frac{1}{2}$, N. W. $\frac{1}{4}$, 23.....	36	14
Luther Higby.....	S. E. $\frac{1}{4}$, 14.....	36	14
Luther Higby.....	N. W. $\frac{1}{4}$, 14.....	36	14

* W. Indiana.

† E. Illinois.

John M. Wilson, of Chicago, was the agent for the trustees to secure the right of way for the feeder and to settle for overflowed lands. Appraisers were appointed to assess damages, who made their first report in 1849:

Wm. Gooding, Esq.

CANAL OFFICE, CHICAGO, July 24th, 1850.

DEAR SIR:—In answer to your dispatch to Gov. Wells, I have procured the following list from the awards on file in the clerk's office:

J. H. Kinzie.....	\$150 00	Hannah Hulburt.....	\$670 00
County of Cook.....	117 50	T. Shepard and wife.....	25 00
Stephen Jones.....	25 00	A. H. Holden.....	575 00
Andrew Benson.....	100 00	John McGlashen.....	1 00
R. B. Heacock, et al.....	255 00	Holstein Terrison.....	150 00
R. B. Heacock, alone.....	75 00	Geo. W. Brownwell.....	90 00
John Lawson.....	40 00	Joseph Case.....	325 00
H. D. Young.....	300 00	J. H. Wicker.....	255 00
D. H. Pierce.....	300 00	Stowell & Wicker.....	378 00
J. J. Rinker and wife.....	60 00	E. C. Stowell.....	.....
Trustees of Schools.....	200 00	Augt. Schmidt.....	.....

There were some claims settled without being referred to the board of appraisers. George Dalton \$200 00 and some others for small amounts, but I have no means of knowing the amounts or persons to whom they are to be paid.

As stated in my dispatch, Gov. Wells and Mr. Prescott started yesterday P. M. to the Calumet—they will go to Earle's Mills, and will probably return here tomorrow evening.

Truly yours,

A. J. GALLOWAY.

Wm. Gooding, Esq., Sec'y B. T. of I. & M. Canal.

Many judgments are entered in the circuit court of Cook county of which little or no records can be found in the canal office. An effort appears to have been made by swamp land speculators through the State Authorities of Indiana, in 1856, to have the Calumet dam removed.

The following letter from I. N. Arnold, attorney for the trustees, explains this and also conveys other valuable information:

CHICAGO, April 10, 1856.

Capt. William H. Swift, Western Railroad Office, Boston, Mass.

DEAR SIR:—I returned from Indianapolis yesterday. I had an interview with Gov. Wright and the officers of the State of Indiana, and laid before them my views in regard to the Calumet ditch; and the result was, the Governor will suspend all action in regard to the matter, until after next meeting of Legislature.

He will call their attention to it in his message, and unless instructed so to do by the Legislature nothing farther will be done.

He will see that the canal trustees are notified, with a view of their being heard before the Legislature. The Governor and state officers treated the matter with great courtesy, and manifested liberal views; and unless the speculators in swamp lands raise a great clamor and influence the members of the Legislature, I think we can induce them to let the matter rest.

I will state very briefly the grounds on which I asked them to desist.

1. The Illinois and Michigan canal trustees are riparian owners of both banks of Calumet, continuously in the State of Illinois, and to some extent (by paying damages) in Indiana.

2. They as such have a *clear legal right* to have the stream continue to flow in its *original channel*, and Indiana can not legally divest it or any part of it. If she attempts to do so, the court will enjoin her.

3. Indiana *knew* by her engineers, etc., that the canal trustees of Illinois proposed to make this dam as early as 1836. She contemplated connecting the *Wabash and Michigan canal* and to use Calumet and our Calumet feeder for that purpose. A meeting of engineers of both states was had and plan discussed and perhaps by mutual consent adopted.

At all events Indiana knew what we were doing—stood by and saw *without objection*. Illinois expended seven or eight millions on this plan. She is now stopped from raising the objection. She ought to have objected, if at all, before Illinois expended her money.

This acquiescence amounts to a license by Indiana, and a court of equity would enjoin her from interfering now, etc.

I will reserve details until I see you; I employed the State librarian to look up and prepare and send me all the legislative reports of commissioners, engineers, etc., to be found in Indianapolis on these subjects.

The *difficulty in the case* is, our dam throws back-water into Indiana, and is clearly illegal, except for the acquiescence of that State. I will reserve full details until we meet, as I can explain matters much more satisfactory then, than by writing. Meanwhile, we have until next winter to examine our position.

Very truly yours,

I. N. ARNOLD.

In 1861 the Legislature of Indiana again passed an act to procure the removal of the Calumet dam. The following copy of a letter from Gov. O. P. Morton and accompanying document explains this attempt in full:

STATE OF INDIANA, EXECUTIVE DEPARTMENT,
INDIANAPOLIS, 28 Feb'y, 1862.

His Excellency, Richard Yates, Governor of Illinois, Springfield.

SIR:—I beg leave to call your attention to an act of the Legislature of the State of Indiana, chapter 87, page 161; acts of the Forty-first regular session passed March 9th, 1861.

You will observe by the third section of that act that it is made my duty to endeavor, by application to be made through the proper authority of the State of Illinois, to procure the abatement of the dam of the Calumet river erected by the State of Illinois, for the purposes in the first section of the act mentioned.

The citizens of Indiana, and particularly the inhabitants in the vicinity of the lands overflowed, complain that the continuance of the dam is a great injury to them. I shall be pleased to hear from you that the State of Illinois will either remove the dam or adopt some other course by which the evil can be overcome or so mitigate as to avoid just complaint.

I have the honor to be very respectfully, your obedient servant,

O. P. MORTON,

Governor of Indiana.

P. S.—A copy of the act above referred to is herewith enclosed.

"An act to provide for the prosecution of the necessary judicial proceedings to procure the removal of the feeder dam erected across the Calumet river in the State of Illinois, and for the payment of the expense of such proceeding," approved March 9, 1861.

SECTION 1. *Be it enacted by the General Assembly of the State of Indiana,* That the attorney be, and he is hereby authorized to commence and prosecute to final judgment, such judicial proceedings as in his opinion are, or may be necessary for the purpose of procuring the abatement and removal of the feeder-dam erected by authority of the State of Illinois across the Calumet river, for the purpose of supplying water to the Illinois and Michigan canal, or of procuring the height of said dam to be reduced so that it will not cause the waters of said river to overflow any lands in the State of Indiana.

Sec. 2. If in the opinion of the attorney general it shall be proper and expedient to do so, the State of Indiana may be made plaintiff alone or jointly, with one or more citizens of this state, in any judicial proceeding contemplated by the first section of this act, or such proceedings as may be prosecuted in the name of one more citizens of this state as plaintiffs, without making the state a co-plaintiff, and such proceedings may be instituted and prosecuted against any person or persons, body corporate, which may be a proper party thereto, in any court of competent jurisdiction.

Sec. 3. Before any judicial proceedings shall be commenced in pursuance of this act, it shall be the duty of the Governor to endeavor by application to be made as soon as practicable, to the proper authorities of the State of Illinois, to procure the abatement of said dam without suit, and in the event of failure on the part of the Governor to procure the same to be abated, then the Attorney General is authorized to enter into an agreement for the abatement of said dam within one year from the time the Governor shall apply for its removal as above provided. Such agreement shall be between the State of Indiana and the State of Illinois or the proper officer or officers thereof.

Sec. 4. If a satisfactory agreement can not be made as provided for in the preceding section, then the attorney general shall commence suit imme-

diately as provided in the first and second sections of this act. (Sec. 5 appropriates \$1,000.00 for payment of expenses incurred in carrying into effect the provisions of the act.)

Sec. 6. Discloses the law in force and effect from and after its passage.

The removal was accomplished in 1874 by means of the following act of the General Assembly of Illinois and the order following this act for its removal:

A BILL

For "An act to authorize the removal of the feeder dam across the Calumet river, near Blue Island, in Cook county, in the State of Illinois, and to provide compensation to Christian Pfeiffer and John Roll for any loss that they may sustain by its removal."

Whereas, The General Assembly of the State of Illinois did, by joint resolution of the 13th and 14th days of March, 1872, direct that the canal commissioners of the State of Illinois proceed at once to remove the dam across the Calumet river at Blue Island, in Cook county, Illinois; and, whereas, an attempt was made by said commissioners to remove said dam, and they were prevented from effecting its removal by injunction obtained by said Pfeiffer and Roll; and, whereas, the said dam is no longer used by this State, and is no longer of public utility, but its continuance is detrimental to the public and causes the overflow of a large body of land in this State and in the State of Indiana, causing great and irreparable injury to the people of said State; therefore,

SECTION 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly:* That the Governor of the State of Illinois, be, and he is hereby authorized and directed to require the canal commissioners of this State, or some suitable persons to be selected by him, without delay, to remove the dam across the Calumet river, at Blue Island, and in case the persons so appointed shall fail to remove said dam within a reasonable time thereafter, then, and in that case, the Governor shall make such other appointments as may be necessary to secure the removal of said dam, the expense of such removal to be paid out of the funds in the hands of the canal commissioners or their treasurer.

Sec. 2. That so soon as Christian Pfeiffer and John Roll shall release to the State of Illinois by quit claim deed all right they now claim to have to the said dam and the water power thereby created, that then and in that case, on the order of the Governor, the Auditor of Public Accounts be, and he is hereby authorized to draw his warrant on the State treasurer in favor of said Christian Pfeiffer and John Roll for the sum of not exceeding six thousand dollars (\$6,000.00) to be paid out of any money at any time in the treasury not otherwise appropriated.

Sec. 3. That as an emergency exists, this act shall therefore take effect and be in force from and after its passage.

Approved and in force March 27, 1874.

SPRINGFIELD, April 9, 1874.

Hons. J. Utey, W. U. Brainard, H. G. Anderson, Canal Commissioners.

SIRS:—Christian Pfeiffer and John Roll having released by quit claim deed to the State of Illinois all their title, right and interest in and to the dam across the Calumet river in Blue Island, in Cook county, Illinois, and the water power thereby created, and in consideration thereof, the Auditor of Public Accounts having drawn his warrants on the State Treasurer in their favor in the sum of six thousand dollars, in pursuance of section 2 of an act approved and in force March 27, 1874, by virtue of said act you are hereby authorized and directed, without delay, to remove said dam—the expense of said removal to be paid out of canal funds in your hands.

Very respectfully,

JOHN L. BEVERIDGE.

Governor.

The Calumet feeder and 90 foot reserve on either side thereof, together with the overflowed lands along each side of the Calumet river, came into possession of the State of Illinois at the completion of the dam at Portland in 1848. The State remained in peaceable and undisputed possession from that time until the removal of the dam in 1874, a period of twenty-six years.

The 90 foot on the east side of the feeder through sections of land acquired by the act of 1829 was reserved from sale by the canal trustees.

The following releases of right of way and for damages by overflow are on file among the canal records:

DEEDS CALUMET FEEDER.

Number.	By Whom Released.	Description.	Date.
1	James H. Rees and wife	E. $\frac{1}{2}$ W. $\frac{1}{2}$ N. E. $\frac{1}{4}$, 17, 37, 13	Jan. 9, 1846
2	John B. Turner and wife	S. W. $\frac{1}{4}$ of 26 and N. $\frac{1}{2}$ sec. 27, 37, 13	Feb. 25, 1846
3	Marcellus Farmer and wife	E. $\frac{1}{2}$ of E. $\frac{1}{2}$ N. E. $\frac{1}{4}$, 17, 37, 13	Feb. 10, 1846
4	DeWitt Lane and wife	E. $\frac{1}{2}$ S. E. $\frac{1}{4}$ sec. 21, 37, 13 and S. W. $\frac{1}{4}$, 22, 37, 13	April 4, 1846
5	R. E. & R. B. Heacock	E. $\frac{1}{2}$ N. W. $\frac{1}{4}$ sec. 6, 36, 14	June 6, 1846
6	George Dalton	Part S. fr. N. E. fr. N. W. $\frac{1}{4}$, 29 S. fr. S. W. $\frac{1}{4}$, 20 and N. fr. N. E. $\frac{1}{4}$, 19, all 36, 15 E.	July 20, 1850
7	Geo. Earle	N. W. $\frac{1}{4}$, 13, 36, 8, fr. 14, 36, 8, N. W. $\frac{1}{4}$, 32, 36, 7	July 30, 1850
8	Trustees Town	36, 14, sec. 15, 36, 14	Aug. 3, 1850
9	Simon Benschop	Part of sec. 15, 36, 14	Aug. 5, 1850
10	Cornelius Arentzel	S. fr. of S. E. $\frac{1}{4}$, 9, 36, 14 and E. $\frac{1}{2}$ S. W. $\frac{1}{4}$ same sec	Aug. 5, 1850
11	John VanEckle	Parts N. W. $\frac{1}{4}$, 15, 36, 14	Aug. 5, 1850
12	Gowen & VanVaren	Part S. E. $\frac{1}{4}$, 15, 36, 14	Aug. 5, 1850
13	Henry DeYoung	S. W. $\frac{1}{4}$, 15, 36, 14	Aug. 13, 1850
14	Holstein Terreson	40 acres of N. fr. S. W. $\frac{1}{4}$, 20 and E. fr. S. E. $\frac{1}{4}$, 19, 36, 15	Aug. 20, 1850
15	John Lawson	N. E. fr. $\frac{1}{4}$, 19, 36, 15	Aug. 20, 1850
16	R. B. Heacock	E. $\frac{1}{2}$ N. E. $\frac{1}{4}$, 19, 36, 13 also und. $\frac{1}{2}$ N. W. $\frac{1}{4}$, 6, 36, 14; und. $\frac{1}{2}$ N. E. $\frac{1}{4}$, 1, 36, 13; und. $\frac{1}{2}$ of und. $\frac{1}{2}$ N. W. $\frac{1}{4}$, 6, 36, 14	Aug. 29, 1850
17	Hanna Hulburt and Wm. B. Eagan	E. $\frac{1}{2}$ N. E. $\frac{1}{4}$ sec. 23, 36, 14	Aug. 30, 1850
18	Hannah Hulburt	Part W. $\frac{1}{2}$ N. W. $\frac{1}{4}$, 25, 36, 14; also E. $\frac{1}{2}$ N. E. $\frac{1}{4}$, 26, 36, 14	Aug. 30, 1850
19	Daniel Robinson	E. $\frac{1}{2}$ S. E. $\frac{1}{4}$, 36, 37, 13 and S. E. fr. and S. W. fr. of N. W. fr. $\frac{1}{4}$, 19, 36, 15	Sept. 18, 1850
20	John Kallewinger	Part of N. W. $\frac{1}{4}$, 15, 36, 14	Sept. 21, 1850
21	Andrew Anderson	E. 40 acres N. fr. N. W. $\frac{1}{4}$, 19, 36, 15	Sept. 23, 1850
22	I. I. & Helen Rinker	W. $\frac{1}{2}$ of N. E. $\frac{1}{4}$, 26, 36, 14	Sept. 30, 1850
23	Sheldon W. Peck	91.56 acres E. S. N. fr. S. W. $\frac{1}{4}$ exc. 40 acres conveyed sec. 20, 36, 15; also S. W. $\frac{1}{4}$, 10, 36, 14; and N. W. fr. $\frac{1}{4}$, 9, 36, 14	Oct. 7, 1850
24	Antze Wagmeister	E. $\frac{1}{2}$ N. W. $\frac{1}{4}$, 25, 36, 14, 79 acres E. of Thann Creek	Oct. 14, 1850
25	T. & L. C. Shepherd	Part 24, 36, 14	Dec. 25, 1850
26	W. M. Gowens	W. $\frac{1}{2}$ S. E. $\frac{1}{4}$ sec. 15, 36, 14	Jan. 8, 1851
27	Roll VanVeurin	N. E. $\frac{1}{4}$ sec. 15, 36, 14 and part N. W. $\frac{1}{4}$ of 15, 36, 14	Jan. 8, 1851
28	John H. Kinzie	N. W. $\frac{1}{4}$, 34, 36, 14	April 25, 1851
29	A. H. Halden	N. W. fr. $\frac{1}{4}$, 24, 36, 14	June 2, 1851
30	Daniel Pierce	W. $\frac{1}{2}$ N. $\frac{1}{2}$ E. $\frac{1}{2}$ S. E. $\frac{1}{4}$, 23, 36, 14; also 4 th acres off S. part W. $\frac{1}{2}$ S. E. $\frac{1}{4}$, same lot	June 4, 1851
31	J. Case	Part N. E. $\frac{1}{4}$ sec. 34, 36, 14	June 6, 1851
32	Andrew Benson	N. E. $\frac{1}{4}$ S. W. $\frac{1}{4}$ and N. W. $\frac{1}{4}$ S. W. $\frac{1}{4}$, 19, 36, 15	June 6, 1851
33	T. Talling Booe	N. fr. S. W. $\frac{1}{4}$, 14, 36, 14 and parts N. E. cor. S. E. fr. 15, 36, 14	Aug. 1, 1851
34	Henry Robinson	E. $\frac{1}{2}$ S. E. $\frac{1}{4}$, 36, 37, 13	Sept. 17, 1852
35	Trustees Rehabath Society	Part S. W. $\frac{1}{4}$, 15, 36, 14	Feb. 2, 1853
36	Seth Thomas	N. W. $\frac{1}{4}$, 26, 36, 14; S. E. fr. $\frac{1}{4}$, 13, 36, 14	Oct. 23, 1853
37	I. & P. Higby	W. $\frac{1}{2}$ N. W. $\frac{1}{4}$, 23, 36, 14; S. E. $\frac{1}{4}$, 14, 36, 14 and N. W. $\frac{1}{4}$, 14, 36	Dec. 20, 1853
38	Ira Gardiner	S. W. $\frac{1}{4}$, 36, 14	Dec. 39, 1853
39	Hans Hansen & Niles Wibye	N. E. fr. $\frac{1}{4}$ sec. 19, 36, 15 and E. 66.38 acres of W. fr. of S. E. $\frac{1}{4}$, 19, 36, 15	Dec. 30, 1853
40	Geo. W. Brownells	Part N. E. $\frac{1}{4}$ and S. W. fr. $\frac{1}{4}$, 24, 36, 14 and W. $\frac{1}{2}$ S. W. $\frac{1}{4}$, 25, 36, 14	May 23, 1855

In release Nos. 1 to 5, inclusive, upon abandonment title reverts, in all others the easement is perpetual, being forever and forever.

NINETY-FOOT RESERVE—LOTS AND LANDS.

As bearing directly and intelligently upon the title to the 90-foot reserve through the even sections of land, I have taken the liberty of quoting from the brief of Messrs. Lincoln & Stead of Ottawa, Illinois, in the matter of *Werling vs. Ingersol*, Supreme Court of Illinois.

"The grant of 1822 was an absolute grant of a strip 90 feet in width on each side of the canal to be forever reserved from sale to be made by the United States and the use thereof forever shall be and the same is hereby vested in the State for a canal, until the canal route was determined, the title was afloat; upon its determination, the location of the 90-foot strip became certain and the title of the State acquired precision and attached to it as of the date of the grant."

The State of Illinois being so invested with the title to said lands, the survey and marking out of the route of said canal under and in compliance with said act of Congress and the construction of said canal by the State connecting the Illinois river with the southern bend of Lake Michigan under and by virtue of said act and the act of Congress of March 2nd, 1827, gave precision to the title and attached it to the particular lands within 90 feet on each side of said canal as constructed by the state.

March 2nd, 1827, Congress granted to the State for the purpose of aiding in opening a canal, a quantity of land equal to one-half of five sections in width and reserving each alternate section to the United States. As is well known, the original canal lands included the odd numbered sections embraced in a strip averaging 10 miles in width commencing at Lake Michigan and terminating on the Illinois river, a distance of 101.35 miles. The canal by this act was entitled to receive 324,320 acres of land. There was selected and approved under President Andrew Jackson, March 5th, 1842, 285,669.11 acres. Selected and approved by President John Tyler, August 29, 1842, 5,755.26 acres. The last selection was in lieu of certain lands which had been sold or patented to individuals by the United States before the location or selection by the State had been approved by President Jackson, comprising nine sections leaving 32,895.63 acres to be selected, which was selected under the act of August 3rd, 1854, from the Danville Land District.

As early as 1785 Thomas Jefferson and others formulated the present system of land surveys and Congress foreshadowing the permanent policy of the nation in encouraging education, enacted that 1-36 of all the public lands should be set apart and dedicated to the cause of education.

April 18, 1818, Congress passed an act to enable the people of Illinois to frame a constitution and State Government, etc.

Article 6, paragraph the first provided that sections numbered 16 in every township and where such sections have been sold or otherwise disposed of other lands equivalent thereto and as contiguous as may be shall be granted to the State for the use of the inhabitants of such township for the use of schools. This proposition was accepted by ordinance of Illinois passed by the constitutional convention of the State of Illinois at Kaskaskia, August 26, 1818.

The benefits derived from the act of 1822 was subject only to the act of 1818.

"Section 16 in the several townships within the State after such grant and acceptance were not public lands within the act of Congress of March 30, 1822, relating to the Illinois and Michigan canal."

(See Starr & Curtis 1896, page 3,718.)

"In the years 1847 and 1848 Artemus J. Mathewson, a surveyor and engineer, under the authority and direction of the canal trustees, surveyed and marked the lines of the 90-foot strip on each side of the canal from one end thereof to the other and prepared and filed in the office of the board of trustees, maps and profiles of said survey."

The Fox river feeder, Kankakee feeder, DuPage feeder and the Calumet feeder were each surveyed and the reserved lines marked, the plat of which were also filed in the office of the board of trustees. These plats are included in three separate books. Book No. 1 comprises all of the Summit division and Calumet feeder together with a plat of all overflowed lands in the Calumet region.

No. 2 comprises plats of the Middle division—the Kankakee and DuPage feeders.

No. 3 the Western division, the Fox river feeder, the lateral canal and basin at Ottawa and the basin and terminal of the canal at LaSalle.

The various State enactments bearing upon this question are as follows:

“An act to provide for the improvement of the internal navigation of this State.”

Sec. 10.—Said commissioners may sue and be sued, and defend in the name of said commissioners of the Illinois and Michigan canal. And to enable said commissioners to accomplish the object herein contemplated, it shall be lawful for them to enter, and take of and use, any lands, waters and streams necessary for the prosecution of the work intended by this act.

Approved January 22, 1829.

“An act to amend an act to provide for the construction of the Illinois and Michigan Canal.”

Sec. 11.—Nothing in this act, or the one to which this is an amendment, shall be so construed as to prevent said commissioners, or their successors in office, from using any stone, timber, ground or water, or other material for the purpose of making or aiding said canal, which may be required in construction, and in all sales of said land this right is hereby expressly reserved free from any cost, charge or liability whatever. And the said commissioners may reserve from sale any tract or tracts of land which they may think useful on account of its timber, rock, or other advantages in the construction of said canal.

Approved February 15, 1831.

“An act for the construction of the Illinois and Michigan Canal.”

Sec. 16.—The said canal shall not be less than forty-five feet wide at the surface, thirty feet at the base, and of sufficient depth to insure a navigation of at least four feet, to be suitable for ordinary canal boat navigation, to be supplied with water from Lake Michigan and such other sources as the canal commissioners may think proper, and to be constructed in the manner best calculated to promote the permanent interest of the country, reserving 90 feet on each side of the canal to enlarge its capacity whenever in the opinion of the board of canal commissioners the public good shall require it: Provided, that all persons who have purchased or shall hereafter purchase lands fronting the said canal shall be permitted to lease from the said board the said reserved ground on each side of said canal, from year to year, or until the said ground shall be wanted to enlarge the capacity of said canal for the best price that can be obtained, to be paid into the canal fund.

Sec. 21.—It shall be lawful for them to enter upon and use any lands, water, streams and materials of any description necessary for the prosecution of the works contemplated by this act.

Sec. 32.—The commissioners shall examine the whole canal route and select such places as may be eligible for town sites, and cause the same to be laid off into town lots, and they shall cause the canal lands in or near Chicago, suitable therefore, to be laid off into town lots.

Sec. 33.—And the said board of canal commissioners shall, on the twentieth day of June, next, proceed to sell the lots in the town of Chicago and such parts of the lots in Ottawa, as also fractional section fifteen, adjoining the town of Chicago, it being first laid off and subdivided into town lots, streets and alleys, as in their best judgment will best promote the interest of the said canal fund: Provided, always, that before any of the aforesaid town lots shall be offered for sale, public notice of such sale shall have been given

in such newspapers, not less than five in number, including the one printed at Vandalia, either in this or other states as the board may think best, at least eight weeks prior to any sale: Provided, further, that if no sale be made on the day herein named, such sale may be made at any time thereafter upon giving the notice and upon the terms herein required.

Approved January 9, 1836.

"An act to amend an act for the construction of the Illinois and Michigan Canal," approved January 9, 1836.

Sec. 4.—Said board shall also as soon as convenient, authorize a survey and estimate to be made of the route of a canal, diverging from the main trunk of the Illinois and Michigan Canal, through the Ausaugenaske swamp and lake, to intersect the Calumet river at the nearest practicable point, the said work to be constructed whenever the State of Indiana shall undertake a corresponding work, connecting her system of internal improvements with the Illinois and Michigan Canal.

Sec. 7.—The said commissioners shall have power to cause surveys of such town lots as they may select, to be laid out by such person or persons as they may think proper, the plats of such towns certified by such persons so employed, and said commissioners shall be recorded in the recorder's office in the county where such town is situated, and such plat so certified and recorded or an attested copy thereof, shall be evidence in any court of law or equity of this State, and plats of said town sites, subdivisions or sections or surveys, which have been made and certified by the former commissioners, shall also be recorded in the same manner and have the same validity as aforesaid.

Sec. 8.—The said commissioners shall construct a navigable feeder from the best practicable point on Fox river, to the Illinois and Michigan canal at the town of Ottawa, and such basins and lateral canal connecting the Illinois river with said canal at the point as in their opinion will most enhance the value of the property of the State.

Sec. 9. That the judge of the circuit court within whose circuit the said canal lands are situated, shall on or before the first Monday in June next, appoint three commissioners citizens of the State, who shall not be interested in any lands within the district or country through which said canal passes, and who do not reside in said district, to be a board for the appraisement and determination of all questions of damages which may arise from the construction of said canal, a certificate of whose appointment under the hand of the said judge, shall be recorded in each county in which any of said lands lie. It shall be the duty of said commissioners, whenever requested by the board of canal commissioners, to examine into all questions of damages which may arise between said canal commissioners, and any individual or individuals to make reports within twenty days after such examination in writing to the said canal commissioners, and file a copy of such reports in the clerk's office of the circuit court of the county in which the land may lie, on which any damages may be claimed, which reports shall contain a full account in writing of said claim, the manner in which it may arise, and all such testimony as may be taken by them in relation to the same; also an assessment of the damages if any are awarded, accompanied by a description of the property to be surrendered by such individual to the State, where the question of damages may relate to the right of way, or surrender of land for the use of hydraulic or other purposes; upon the return of said report and assessment of damages aforesaid, the said circuit court at its succeeding term, if in its opinion the damages assessed are not too high, and if no objection be made to the same, shall cause an order to be made of record, directing the said board of canal commissioners to pay to such individual or individuals, in whose favor he may decide, such sum as may be awarded for his or their damages as aforesaid, with such cost as such party may have expended in the defence of such claim for damages to be certified by the court: *Provided, however*, that if upon examinations of such returns, assessment and testimony furnished as aforesaid, by said commissioners, if the said court shall be of the opinion the said assessment is too high, or the individual or individuals in whose favor such assessments shall be made shall be dissatisfied with the same, the said

court shall proceed to hear and determine the question of damages in such manner as it may deem equitable and just, and the said court is hereby vested with full power and jurisdiction, to make all orders and decrees in the premises, and to enforce their observance, necessary to carry into full effect all, or any decision which may be made: *Provided*, that appeals shall be allowed to the supreme court as in other cases: *And provided, also*, that the court shall have power to compel all persons to pay all costs occasioned by their objections or exceptions to assessments, which are not sustained by the court, and the court shall have power in all cases to make such orders in respect to cost as may be deemed equitable and just. In assessing damages, regard shall be had as well to the benefit as the injury arising from the construction of the canal.

Sec. 10. The canal commissioners shall insist upon the right of the State to the right of way, through and upon all lands heretofore sold or granted by the State, and also the use of all water and materials required in the construction of the canal under the reservation contained in the tenth section of the act passed January the 22nd, 1829, providing for the construction of the said canal, and under the reservation contained in subsequent laws on the same subject; but if the courts shall decide against this right, then the same mode of proceeding shall be had in reference to said lands, water and materials as in other cases.

Sec. 13. The canal commissioners shall cause the plats of the town of Chicago and Ottawa, by which they were governed in selling lots in said towns, to be recorded with the certificates of the late canal commissioners, endorsed thereon as to the identity of said plats. They shall also have power to execute and to perform all duties heretofore required of canal commissioners in relation to alterations in the survey of the town of Ottawa: *Provided*, that no rights acquired by individuals shall be affected thereby. The plats of said towns, or certified copies thereof, shall be admitted as evidence in all courts or places whatsoever.

Sec. 18. Every part of the act to which this is an amendment that does not conflict with the provisions of this act, shall be and remain in full force, and govern the commissioners to be elected under the provisions of this act, in their duties as canal commissioners, and so much of said former act as conflicts with this act, is hereby repealed.

Approved March 2d, 1837.

"An act to provide for the sale of certain canal lands and for other purposes."

Section 5. In the construction of the navigable feeder and lateral canal at Ottawa, the canal commissioners may so alter the plan heretofore prescribed, as to connect the said feeder or lateral canal with Fox river, instead of the Illinois river, or make any other change which in their judgment may be best calculated to enhance the value of State property, and the usefulness of the canal.

Sec. 7. The canal commissioners are authorized to enlarge the natural basin at the confluence of the north and south branches of the Chicago river, so as to render the same as useful and convenient as possible; and block number seven, of the canal lots in the city of Chicago, shall be reserved from sale for the purpose of exchanging the same for block number fourteen, which will be required to be removed in the enlargement of said basin; and the said commissioners are hereby required to cause the aforesaid, and proceed to obtain the title to the same, in the manner provided by law for obtaining lands or materials for the use of the canal.

Approved July 21, 1837.

"An act making further provisions for the sale of canal lands."

Section 3. It shall not be necessary for the board of canal commissioners to require the services of assessors in ascertaining damages accruing to individuals by reason of the use of land, water, or timber where said board can agree with the claimant for such damages.

Approved February 22, 1839.

"An act to amend the several laws in relation to the Illinois and Michigan canal."

Section 2. In all sales of lots and lands under the provisions of this act, the following conditions shall be annexed, and shall compose part of the contract: Sec. 2. Par. 5. That a violation of any one of the conditions of sale shall work a forfeiture of all rights acquired by the purchaser. Par. 9. That no stream of water passing through the canal lands shall pass, by the sale, so as to deprive the State from the use of such water, if necessary to supply the canal, without charge for the same. Par. 11. Lands situated upon streams which have been meandered by the surveys of public lands by the United States shall be considered as bounded by the lines of those surveys, and not by the streams.

Sec. 15. The board of canal commissioners shall proceed to the construction of the canal diverging from the main trunk of the Illinois and Michigan canal, through the Saganaskee swamp, and Grassy lake, to intersect the Calumet river at the most practicable point, the survey of which was authorized by the fourth section of the act entitled, "An act to amend an act entitled, 'An act for the construction of the Illinois and Michigan canal, approved January 9, 1836,' approved March 2, 1837," whenever they shall be notified that the State of Indiana has commenced the construction of a corresponding work to connect her system of internal improvements with the Illinois and Michigan canal; and the cost of such construction shall be paid out of the canal funds. In forming a junction with the Illinois and Michigan canal, and the Calumet river, and in the location throughout, the board shall adopt the most natural connection and route, keeping in view the shortest, best and cheapest route, and the interest of the State in lands and otherwise. The said canal shall be deemed and considered as part and parcel of the Illinois and Michigan canal, and the laws and regulations adopted with reference to the construction thereof, the duties of canal commissioners, the making and executing contracts, shall be held and deemed applicable to the canal directed to be constructed by this act.

Sec. 18. Islands and inundated lands situated within the limits of sections of lands granted to the State by the United States, shall be deemed, occupied, and held as canal lands.

Approved Feb. 26, 1839.

"An act to amend the several laws in relation to the Illinois and Michigan canal."

Sec. 4. It shall be the duty of the commissioners when any person or persons claim damages that they may have sustained, by the construction of the Illinois and Michigan canal, to settle with any such person or persons for the damages that they may have received, and pay the same: *Provided*, if the commissioners are of the opinion that the claim is too high, and the claimant will not take a fair compensation, they shall call the appraisers as required by the act to which this is an amendment, and they shall proceed as required in said act. Said appraisers shall receive a reasonable compensation, not to exceed five dollars per day for their services, for the time necessary to perform the duties required of them as such appraisers, and shall be paid out of the canal fund. Approved February 1, 1840.

"An act to provide for the completion of the Illinois and Michigan canal and for the payment of the canal debt."

Sec. 10. For the purpose of placing in the hands of trustees full and ample security for the payment of said loan authorized by this act, and the interest thereon, as well as for securing a preference in the payment of such of the canal bonds and other evidence of indebtedness issued by the State for this purpose of aiding in the construction of the Illinois and Michigan canal as may be owned by the subscribers to the said loan, the State does irrevocably grant to the said board of trustees of the Illinois and Michigan canal the bed of the Illinois and Michigan canal, and the land over which the same passes, including its banks, margins, towpaths, feeders, basins, right-of-way, locks, dams, water power, structures, stone excavated and stone materials quarried, purchased, procured or collected for its construction; and all the property,

right, title and interest of the State, of, in, and to the said canal, with all the hereditaments and appurtenances thereunto belonging, or in any wise appertaining, and also all the remaining lands and lots belonging to the said canal fund, or which hereafter may be given, granted or donated by the general government to the State, to aid in the construction of said canal and the buildings and erections belonging to the State thereon situated; the said board of trustees to have, hold, possess and enjoy the same, as fully and as absolutely in all respects, as the State can now or hereafter could do, for the uses, purposes and trusts hereinafter mentioned, but it is to be understood that all canal lots and lands heretofore sold by the board of commissioners upon which moneys are now due, whether the said canal lands or lots be now forfeited or relinquished, or hereafter become forfeited or relinquished, shall be exempt from the aforesaid provisions of this act, and the trustee herein provided to be appointed by the Governor, or any other officer or officers having the management of the affairs of the canal, until said trustee be appointed on the part of the State, is hereby authorized and required to settle all accounts due to contractors and others (except for such damages as hereafter provided for) by issuing certificates of indebtedness which together with the certificates of indebtedness, scrip and acceptances heretofore issued by the canal commissioners, shall be received by said trustee or other officer, or officers aforesaid in payment of said lots and lands whenever they may be presented for that purpose. The said lands and lots hereby reserved shall, within three months after the passage of this act, be appropriated as provided in the thirteenth section of this act, and sold in accordance with the laws of this State regulating the sale of canal lands.

Sec. 13. The said board of trustees when appointed are hereby authorized to take possession of the said canal lands, property and assets, granted to them by this act, and proceed to complete the same. They are hereby authorized to make such changes and alterations of the original plan of said canal as they may deem advisable, without reducing its present capacity, or materially changing its present location, having due regard to economy, permanency of the work, and an adequate supply of water at all seasons. None of the lots, lands or water powers so granted to the said trustees shall be sold until three months after the completion of said canal; the said lots, lands and water powers shall then be offered for sale by the said trustees at public auction, in lots and legal sub-divisions once or oftener in each year for the four succeeding years; such sales to be made for cash or on credit in the manner prescribed in the act of the ninth of January, eighteen hundred and thirty-six. The said lands, lots and water power before they are offered for sale as aforesaid, shall be appraised by three disinterested persons, to be appointed by the judge of the circuit in which said lands, lots and water power, when so appraised, shall not be sold for less than the appraisement. After the expiration of the four years, the said trustees shall expose the residue of said lands, which may remain on hand to sale at such times and in such manner as they may deem proper. The said board of trustees are authorized to convey lands and water powers sold by them as aforesaid, after the purchase for the same be fully paid, but not before; and the said lands and lots shall be exempt from taxation of every description by and under the authority of any law of this State until after the same shall have been sold and conveyed by the said trustees as aforesaid: *Provided, also*, that in the construction of the said canal no change shall be made in its location so as to direct the water power from canal lands: *Provided*, that in all cases where improvements were made upon the said canal lands or lots previous to the first day of February, eighteen hundred and forty-three, the owner of such improvements shall be entitled to purchase the said lands or lots on which said improvements are situated at an appraisement to be made as aforesaid without reference to said improvements.

Sec. 19. Whenever the trust created by this act shall have been fully executed and performed by the said trustees, the said canal and the canal property that may then remain, shall revert to the State, and the State hereby reserves the right of paying off the bonds and certificate to be paid to the said

trustees, and the incidental expenses paid by them, and the interest thereon; and the said trustees shall then resign the said canal and remaining canal property and assets to the State.

Approved February 21, 1843.

Prior to the construction of the canal patents were issued by the State of Illinois to the following parcels and pieces of land through which the canal was constructed:

Fr. part NW. $\frac{1}{4}$ 7-33-4, patented June 22, 1831.

N. fr. part SE. $\frac{1}{4}$ 13-33-4, patented Dec. 1, 1831.

SE. $\frac{1}{4}$ SE. $\frac{1}{4}$ 13-33-4, patented July 16, 1834.

40 acres W. part N. fr. $\frac{1}{2}$ N. of river, 19-33-5, patented July 16, 1834.

W. $\frac{1}{2}$ SE. $\frac{1}{4}$ 9-35-10, patented Dec. 3, 1833.

These last three pieces being a donation to Rachel and Sylvia Hall, Indian captives, under a special law of February 3, 1833.

N. fr. SW. $\frac{1}{4}$ 13-33-4, patented January 22, 1831.

E. fr. part SE. $\frac{1}{4}$ 9-35-10, patented Sept. 10, 1834.

Under special pre-emption law of 1833.

The Mathewson survey of 1847 and 1848 gave the width of the canal and the lines of the reserve the entire length of the canal. See plat books 1, 2 and 3 canal records. From LaSalle to Joliet the towing path is located on the south side of the canal, and from Joliet to Bridgeport it is on the north side. From Bridgeport to the center of section 21, tp. 14, N. R. 14 east, there was reserved from sale 16 feet in width on the south side of the Chicago river for towing purposes, and for a long time this reserve was used for that purpose. The State of Illinois secured title to the canal, its feeders and reserved land through section 16, known as school sections, Ottawa Center, Marseilles, Joliet, Lemont and Canalport section (30-39-14), by the congressional acts of 1822, 1827 and 1831, and the Legislative enactments of 1823, 1829, 1831, 1836, 1837 and 1839. See also LaSalle county, Will county and canal records 1836 to 1845.

There has been in years past and at recurring periods considerable controversy between the canal commissioners and the Chicago, Rock Island & Pacific Railroad Company, over the right of the railroad to use the canal reserve between Ottawa and LaSalle for their road bed, and their right to grant the use thereof for telegraph companies, etc.

This company appears to have been originally chartered in 1847, as the Rock Island and LaSalle Railroad Company. In 1851 the Chicago & Rock Island succeeding to all rights and privileges. Immediately after securing their charter, the company commenced condemnation proceedings for right of way. The following documents are given in full as bearing upon this question:

SPRINGFIELD, Jan, 27, 1851.

EDWARD B. TALCOTT, ESQ.

DEAR SIR:—I received yours of the 16th inst. in due course of mail. Gen'l Thornton was here but has gone home. We have introduced a bill for the continuation of the Rock Island Railroad to Chicago. The bill provides that the road shall pay tolls upon all freight transported upon the canal that is taken upon said canal or destined to a point twenty miles west of the western termination of the canal. That is all freight passing on said canal between a point 20 miles west of the termination of the canal and Chicago shall pay the same toll to the canal that the canal now or may hereafter charge on the same goods during the season of navigation. This gives tolls on all goods that may be carried on said canal commencing down on the Galena branch or up the river on the Central road. Mr. Prescott is now here. I believe he is not satisfied with the bill entirely, but I think the bill is liberal and just towards the canal and was anxious to have it so, but was not willing to put provisions upon the bill that no one would take stock. The building of this road will cause much business to pass through the canal that would never come or go that way without the canal, for instance all the lumber; salt used upon the canal and vicinity on the western end of the road now comes up

and down the Mississippi, and also probably three-quarters of all goods now comes by way of the Ohio or New Orleans, which, when this road is finished, will pass over it and all that passes on the canal will pay tolls, of course destined for this road west of the canal. The great object is to put just enough toll upon the road to keep the canal fund good, or so as not to have any tolls taken from the canal in consequence of the road passing up the canal. I will attend to the other matters mentioned in your letter. I will send you a bill as expected for the construction of the Central road and also a copy of the Rock Island road bill when it passes.

Yours respectfully,

J. H. MATTESON.

CHICAGO, 27th June, 1851.

To the Trustees of the Illinois and Michigan Canal.

GENTLEMEN:—I had the pleasure of enclosing to your president, Capt. W. H. Swift, some time since, a copy of the act of the Legislature of this State to amend the charter of the Rock Island LaSalle Railroad Company.

Your board were, by the provisions of that law, to assent to its terms, in order to avail yourselves of its benefits.

Our road has been located at the meeting of the board of directors in this city along the entire line of canal lands.

We shall now be pleased to know what was the action of the board in relation to the conditions of the amended charter, and if you have declined assenting to its terms. We shall be obliged to you to signify to us in what manner we shall notify you for the assessment of land damages through such canal lands as our road may pass. An answer may be directed to the care of Nelson D. Elwood, Esq., of Joliet, secretary of our board.

Your obt. ser.,

JAMES GRANT,
Prest. Chicago & Rock I. R. R. Co.

ILLINOIS AND MICHIGAN CANAL, BOSTON, July 4, 1851.

JAMES GRANT, ESQ., *President, etc.*

DEAR SIR:—Your communication of the 27th ult. addressed to the board of trustees of the I. & M. Canal has been presented to me this day by Hon. I. B. Wells, State trustee.

You are aware, I suppose, that the trustees have not been presented by your board with information necessary to enable them to know where the location of the R. Road crossing canal lands and lots has been made. Without such information it is not in the power of the trustees to state whether they can accept the conditions set forth in the amended charter of the Rock Island R. R. Co. or not.

If you will cause the board to be supplied with such information as will set forth clearly and distinctly what lands and lots the R. R. Co. require for their location the board will give the matter full consideration and communicate their decision to the R. R. Co.

Very respectfully your obt. svt.,

W. H. SWIFT,
President.

OTTAWA, November 21, 1851.

MR. WM. GOODING, *Secretary Illinois and Michigan Canal, Lockport, Ill.*

You are hereby notified that the Chicago and Rock Island Railroad Company will, at the hour of 10 o'clock a. m., on the sixth day of December, 1851, present a petition to the Hon. Theophilus L. Dickey, judge of the ninth judicial circuit of the State of Illinois, at his chambers in Ottawa, for the appointment of three commissioners to assess the damage (if any) that you may

sustain by reason of such railroad running through a part of the ninety-foot reserve on the north side of the canal for canal purposes; and on the west half of the southwest quarter of section No. nine (9) and all of the north part of section seventeen (17) both in township thirty-three (33) north in range No (3) three east 3rd P. M. in the county of LaSalle and State of Illinois and containing.....acres of land.

NORRIS & FISHER,

Agts. for the Chicago & Rock Island Railroad.

OTTAWA, Nov. 27, 1851.

MR. WM. GOODING, *Secretary Illinois and Michigan Canal, Lockport, Ill.*

DEAR SIR:—Enclosed we send you duplicate copies of a notice to you as secretary, etc., of the board of trustees of the Ill. & Mich. Canal that the trustees may appear before Judge Dickey at chambers, Ottawa, Dec. 6, '51, to try the question as to the Rock Island Rail Road's running on the reserved 90 foot N. of the canal. Please accept service on back of printed notice and return same to us by next mail.

We ought to have given you notice two or three days since, but hope the lack of full time will be waived. If not, we must give another notice. Write us by return of post.

Yours respectfully,

NORRIS & FISHER.

CHICAGO, Dec. 10, 1851.

Capt. Wm. H. Swift, Western Railroad Office, Boston.

DEAR SIR:—I saw Judge Grant today, and he gave me notice that, on the 29th inst., an application would be made before Judge Dickey, at Ottawa, for appraisers to appraise damages to canal lands from Ottawa to Peru, on account of construction of Rock Island railroad, some portion of it is laid over and upon the 90-foot reserve so far as they propose to go upon the 90 foot; if I understand your views correctly, it is to oppose it altogether by all the means in our power. So far as regards the road elsewhere, it is to see that the appraisals are made to the extent of the damage. Judge Grant apologized to me for not having sent you a copy of their map and profile of road, as he says he promised in September last. He said he sought no difficulty with canal and trusted to avoid it, etc., and suggested an agreed case in regard to the 90-foot question.

I am examining this matter and have strong hopes preventing an appropriation of any part of the 90-feet for R. road purposes. It may be necessary to carry this question into the U. S. courts, and in such an event, it may be necessary to file a bill in behalf of some non-resident of Illinois, to enjoin the construction of the road. I say non-resident of Illinois and I mean some subscriber to the loan of \$1,600,000 who resides out of the State of Illinois, and whose interest as such subscriber would be prejudiced by the road. The proceedings before Judge Dickey will be preliminary, and the description will enable me to form a more satisfactory opinion than I am able to do at this moment. I write you in some haste this morning, as I am anxious to receive your instructions before the hearing on 29th inst.

Very truly yours,

I. N. ARNOLD.

CHICAGO, April 26, 1852.

Wm. Gooding, Esq., Lockport, Ill.

DEAR SIR:—I am preparing a bill for an injunction against the Rock Island Railroad Company. To do so requires much labor and preparation, because, if done at all, I wish it well done. I intend to make among others the following point:

1st—The charter of the railroad violates the constitution of the United States which provides that no state shall pass any law impairing the obligation of contracts, etc. The charter violates the contract between the State and the bond holders.

2nd—The use of 90 feet by the railroad violates the grant of lands to the State, and the reservation of 90 feet (must show where they encroach, etc.).

3rd—The 90 feet is needed for the convenient use of the canal and enlargement, repairs, etc.

4th—The act of incorporation provides for the trustees granting right of way "in such manner that the navigation of the canal shall not be injured," (shows how, where, etc., the present location of the road will injure navigation).

Will you please send me the following papers and answers to the following interrogatories:

1st—The contract between the State and the bond holders.

2nd—The deed of lands, and answer as fully as convenient:

3rd—How much was actually advanced to complete the canal? Was it all of \$1,600,000, less or more?

4th—Has there not been published a paper or pamphlet containing a copy of canal laws, deed, contracts, etc., which could be attached to the bill to save copying, etc.?

5th—How much of \$1,600,000 is there unpaid?

6th—The particular description of the lands on which the railroad contractors are at work, whether on the 90 feet, etc., and if necessary for the use of the canal and why; and if necessary for the purposes of enlargement or otherwise.

7th—What has been the amount received for passengers and freight for each year since the canal opened? (So as to show that the railroad will materially lessen them.)

8th—How will the railroad affect the receipts of the canal?

9th—How near is the track to be laid to the canal, and what places (give the section), and how will the running of locomotives affect or impair the use of the canal?

10th—Is it necessary for the road to run so near to the canal, and if not, why not?

Give the names of the contractors, etc.

I am glad to find, the more I reflect and examine the matter, the greater is my confidence that the canal trustees can prevent the construction of the road as at present located. I am getting the bill prepared and shall await your instructions as to filing it before the meeting of the board of trustees. Send me the papers and information as early as convenient, so that I may get the bill into a state of forwardness. If filed, I shall regard it as the most important suit, and involving the gravest questions ever raised in our State. I shall be glad to hear from you.

Yours very truly,

I. N. ARNOLD,

Per J. P. CLARKSON.

These proceedings culminated in the following deed and contract in 1866:

This indenture, made the first day of November, and in the year of our Lord one thousand eight hundred and sixty-six, between the board of trustees of the Illinois and Michigan canal, party of the first part, and the Chicago, Rock Island and Pacific Railroad Company, party of the second part, Witnesseth: That the said party of the first part for and in consideration of the sum of ten thousand five hundred and twenty-four and 72-100 dollars in hand paid by the said party of the second part, the receipt whereof is hereby acknowledged, and the said party of the second part forever released and discharged therefrom hath remised, released, sold, conveyed, and quit-claimed, and by these presents doth remise, release, sell, convey and quit-claim unto the said party of the second part and its assigns forever in the county of LaSalle and State of Illinois. Also the right of way over

the following described lots, pieces or parcels of land, to-wit: So much of lots number nine (9) and ten (10) in block number one hundred and twenty-six (126) as lies within a strip twenty-five (25) feet wide on each side of the center line of said railroad through said lots.

Also so much of lots numbered one (1), two (2), three (3) and five (5), in block number one hundred and twenty-seven (127), as lies within a strip twenty-five (25) feet wide on each side of the center line of said railroad through said lots.

Also, that part of lot number four (4) in block number one hundred and twenty-eight (128), lying south of a line drawn from a point on the east line of said lot two feet from the southeast corner to a point on the west line of said lot twenty (20) feet from the southwest corner.

Also, that part of lot number five (5) in block numbered one hundred and twenty-eight (128), lying south of a line drawn from a point on the east line of said lot twenty (20) feet from the southeast corner, to a point on the west line of said lot thirty-five (35) feet from the southwest corner.

Also, that part of lot number six (6) in block number one hundred and twenty-eight (128), lying south of a line drawn from a point on the east line of said lot 128 thirty-five (35) feet from the southeast corner, to a point on the west line of said lot forty-seven (47) feet from the southwest corner.

Also, that part of lot number three (3) in block number one hundred and thirty-three (133), lying north of a line drawn from a point on the east line of said lot, forty (40) feet from the northeast corner to a point on the west line of said lot, forty (40) feet from the northwest corner.

Also, that part of lot number four (4) in block number one hundred and thirty-three (133), lying north of a line drawn from a point on the east line of said lot thirty (30) six feet from the northeast corner of said lot to a point on the line of said lot thirty-four (34) feet from the northwest corner. Also, that part of lot number five (5) in block number one hundred and thirty-three (133), lying north of a line drawn from a point on the east line of said lot thirty-four (34) feet from the northeast corner to a point on the west line of said lot thirty-two (32) feet from the northwest corner.

Also, thirty-five (35) feet off the north end of lot number six (6) in block number one hundred and thirty-three (133).

Also, that part of lot number two (2) in block number one hundred and thirty-five (135) lying north of a line drawn from a point on the east line of said lot fourteen (14) feet from the northeast corner to a point on the west line of said lot seven (7) feet from the northwest corner.

Also, that part of lot number three (3) in block number one hundred and thirty-five (135), lying north of a line drawn from a point on the east line of said lot seven (7) feet from the northeast corner of said lot to the northwest corner of the same, all in the town (now city) of LaSalle, county of LaSalle, and State of Illinois.

Also, the following described pieces or tracts of land in said county of State. A strip of land in the southeast quarter (1-4) of section number fifteen (15), in township number thirty-three (33), north of range one (1), east of the 3rd P. M., fifteen feet wide on the south side of the center line of said railroad as the same has been surveyed, located and graded through said quarter from the east side thereof to the east line of block number one hundred and thirty-three (133), in the city of LaSalle and eighty (80) feet wide on the north side of said center line for the first five hundred and ninety-six (596) feet from the east line of the quarter and fifty feet wide on the north side of the center line for the balance of the distance to the east line of said block. The center line of the said railroad enters said southeast quarter 22.72 chains south from the northeast corner thereof, and runs thence south 84 degrees, 47 minutes, west 1,577 feet to the beginning of a curve to the right; thence in said curve at an angle of deflection 4 degrees, 48 minutes, radius 5,730 feet and semi-tangent 240 feet 480 feet to the end of said curve, thence south 89 degrees, 35 minutes, west to the east line of block number one hundred and thirty-three (133) aforesaid.

Also, for a strip of land eighty (80) feet wide on the north side and fifteen (15) feet wide on the south side of the center line of said railroad as the same has been surveyed, located and graded through section number thirteen (13), in township number thirty-three (33), north of range one (1), east of the third (3d) P. M.

The center line of said railroad enters said section from the east 547.3 feet south of the northeast corner and runs south 72 degrees and 38 minutes west, 167.1 feet to the commencement of a curve to the left, thence in said curve at an angle of deflection of 2 degrees 36 minutes, radius 5,930 feet semi-tangent 130 feet, 260 feet to the end thereof. Thence south 70 degrees 2 minutes west 1,283.7 feet to the commencement of a curve to the right, thence in said curve at an angle of deflection 10 degrees 48 minutes radius 5,930 feet semi-tangent 541.6 feet 1,080 feet to the end thereof, thence south 80 degrees 57 minutes west 593.6 feet to the commencement of a curve to the left, thence in said curve to the left at an angle of deflection 33 degrees 40 minutes radius 2,291.8 feet semi-tangent 693.4 feet 1,346.6 feet to the end thereof, thence south 47 degrees 10 minutes west 984 feet to the commencement of a curve to the right, thence in said curve at an angle of deflection 19 degrees 33 minutes radius 2,865 feet semi-tangent 493.6 feet 247 feet to the west line of the section. Also a strip of land fifty (50) feet wide on each side of the center line of said railroad as the same has been surveyed, located and graded, through the west half (1-2) of the northwest quarter (1-4) of section number fifteen (15) in township north, range two (2) east of the third (3) principal meridian containing one and twenty-hundredths (1 20/100) acres more or less. The center line of said railroad enters the east side of said section 35.02 chains south of the northeast corner and runs north 69 degrees west through said section and said west half. To have and to hold the same, together with all the rights, privileges, immunities and appurtenances thereunto belonging unto the said Chicago, Rock Island and Pacific Railroad Company and its assigns forever.

In witness whereof, the said Board of Trustees of the Illinois and Michigan Canal has caused the corporate seal of said board to be here affixed, and the names of the president and secretary of said board to be hereunto subscribed this first day of November A. D. 1866.

The Board of Trustees of the Illinois and Michigan Canal.

W. H. SWIFT, *President.*

[SEAL.]

WM. GOODING, *Secretary.*

Whereas, the Board of Trustees of the Illinois and Michigan Canal did by their certain deed dated November 1st, A. D. 1866, convey to the Chicago, Rock Island and Pacific Rail Road Company certain pieces or tracts of land in the county of LaSalle, which said tracts of land were condemned for the use of the Chicago, Rock Island and Pacific Rail Road Company by order of the circuit court of LaSalle county.

And, whereas, afterwards, to-wit: on the 28th day of December, A.D. 1866, the said board of trustees by William Gooding, their secretary, signed, sealed and delivered to the Chicago, Rock Island and Pacific Rail Road Company a receipt for the sum of ten thousand, five hundred and twenty-four and 77/100 dollars, which sum was in full for damages for certain lots and land in LaSalle county condemned for the use of said railroad company, by order of the judge of the circuit court of LaSalle county.

And, whereas, there is a difference in the description of some of said lots or tracts of land in said deed and receipt, the said Rock Island and Pacific Rail Road Company hereby agrees to use and occupy so much of said lots and lands as are described in said deed and no more. Said Chicago, Rock Island and Pacific Rail Road Company also agrees when asked so to do, to deed to said board of trustees all the land south of a line 15 feet south of

the center line of said railroad as the same has been surveyed, located and graded through section 13, township 33, north range 1, east of the 3rd P. M. Also all the lands south of a line fifteen (15) feet south of the center line of said railroad through the southeast quarter of section 15, township 33, range 1, E. of 3rd P. M.

CHICAGO, ROCK ISLAND AND PACIFIC RAIL ROAD COMPANY,

[SEAL.]

By G. H. Beardsley,
Asst. Gen. Supt.

CHICAGO, Dec. 28th, 1866.

(Stamps.)

In 1887 this controversy appears to have been revived by the following resolution which appears in Canal Records Book 1 of Commissioners' proceedings. Page 346, date, July 6, 1887.

On motion of A. Lieberknecht, the president was instructed to make inquiry of the Chicago, Rock Island and Pacific Railroad company why it is occupying the prism of the canal at split Rock in section 13, township 33, range 1, LaSalle county, and the 90-foot strip east of the canal and to report at the next meeting. The report thereon appears of record. There appears, however, to have been some action taken by the president and the following reply received:

CHICAGO, ILL., January 11, 1888.

DEAR SIR:—In regard to your letter of October 29th, I am able to say that the engineer who constructed the road around the track at the tunnel writes that there was "an understanding with the canal commissioners" that no objection would be made to the construction of the road at that point if we did not contract or lessen the boat-way of the canal in so doing. He says that the boat-way was not lessened, the "road-way being cut into the solid rock its full width;" he does not seem to understand what you mean by stating that we occupy "a portion of 90-foot strip for a long distance between Split Rock and Ottawa without authority;" he thinks it possible that in readjusting the tracks when the second track was laid the road may have got over the line of its right-of-way.

If you will send me a plan showing where and what amount of line you claim we are outside of our right-of-way I will have the matter investigated immediately. If there has been any encroachment of course the company will be prepared to make any reasonable adjustment without litigation.

[Signed.]

Truly yours,

THOS. F. WITHROW,
General Solicitor.

ISAAC TAYLOR, ESQ.,
Peoria, Ill.

Immediately following the receipt of this letter, there appears to have been measures taken to ascertain the State's rights in and to that portion of the reserve occupied by the C., R. I. & P. Ry. company, as follows:

To the Canal Commissioners of the State of Illinois.

GENTLEMEN:—In accordance with a request of the Hon. Geo. F. Brown, one of your honorable body, I have made some surveys of the Illinois and Michigan canal.

I first made surveys in the city of LaSalle to locate the point at which the original line entered sections 15-33-1 running westward. I found the quarter section comes between sections 14 and 15. I ran south on said section line 1494.4 feet to the center of the north track.

Their record shows that the center of their located line was south from said quarter section corner 1499.52 feet which would be south from the present center of the north track 5.12 feet thus showing that the north track has been moved north 5.11 feet, and consequently the south track at this point has

been placed south of the located line 8 feet, and since they only had right-of-way on south side of 15 feet, the right-of-way only extends 7 feet on the center line of south track which does not extend as far south as the railroad embankment water in the canal from north track 41.75 feet.

I then ran a line from a stake on the north side of main or first street south 6 degrees 15, east along the east side of Crosat street to the center of the south track 497.6 feet.

Then ran the south track westward to the west side of Bucklin street and located the south track as represented on the Plat of LaSalle.

I then located the southeast corner of block 128 from which point south track center is north 33.157 feet and the north track is 47.157 feet north. Then I located the northwest corner of block 127, and found the north track 7 feet south of the corner and the center of the south track 20.5 feet south of said corner.

Then located the northwest corner of block 128 and found the center of the north track south on the west line of said block 83 feet. Their right-of-way here is 68 minutes south of said northwest corner.

I then located the southeast corner of lot 4, block 128, and found the center of the north track 13.5 south of said corner and since they bought from 2 feet north of said southeast corner their right-of-way at this point is $13.5 + 2 = 15\frac{1}{2}$ feet.

I also located the N. E. corner of block 135 south track; is south 4.6 feet. From the N. W. corner of block 134 to north track 2.7 feet south at N. E. corner of block 134 the north track is south 6.4 feet, and at the northwest corner of block 133 the north track is 5.5 feet south. For all these corners instead of south read S. 6 degrees 15 E., which is the course of the lines of the blocks. Along the north line of the west three lots in block 133 and all of the lots in block 134 their plat indicates that the original location was twelve feet south of Canal street. The tracks have been moved.

I think the plat of LaSalle will explain itself for anything further.

I then commenced at the intersection of inner angle of towpath with the line between sections 14 and 15 and ran eastward along the inner angle of the towpath and found the line of section 14. I then found the quarter section corner and ran south to the center of south track 336.88 feet and to towpath 473.88 feet = 7.17 chains. The canal plats make whole distance to towpath 7.24 chains, a difference of .07 links. But from this could not definitely locate original line of railroad. I found, however, that I could retrace canal line and that it was correct as originally surveyed.

Having found the line on section 14 would retrace, to save time I went to the east line of section 13 on the line between LaSalle and Utica, 5.04 chains east of lock No. 13, and ran north to the center of the south track 111.88 feet. I wished to determine original location of the railroad. I found by canal surveys that the inner angle of the towpath was 11.50 chains south of the northwest corner of section 18, township 33, range 3 east, and therefore 12.18 chains south of the northeast corner of section 13, township 33, range 1 east. I found further that county surveyor Brumbach had measured it and he made it 12.21 chains, a difference of three links. Since it is a precipitous bank and a deep ravine in the rear or to the north, I elected to adopt the canal survey, and the following was the result:

From N. E. Sec. 13 to towpath 12.18 chains equal.....	808.88 feet
From towpath to center of south track.....	111.88 feet
Therefore the distance to center of south track is.....	692.00 feet

Now the distance given per recorded plats on file here is given as 547.3 feet and the distance given on same records from the N. W. corner section 18 south to the located line is given as 9.96 chains or 657.36 feet. One is an error of 110 feet and the other an error of 144.7 feet. With these records I can not determine original location of the railroad, and hence can not determine the right-of-way.

I then commenced at the center of the south track and ran along the center westward around the tunnel to an intersection with the north track as follows: S. 72 degrees 30 minutes W. 369.7 feet to head of lock-wing 44.00. S. 70 degrees 50 minutes W. 1,300 feet to water in canal 14. S. 68 degrees 47 minutes W. 200 feet to water in canal 13.2. S. 65 degrees 53 minutes W. 200 feet to water in canal 11.00. S. 68 degrees 38 minutes W. 150 feet to tunnel on right at 200 to water in canal 10.5. S. 75 degrees 42 minutes W. 200, 13.0. S. 87 degrees .07 minutes W. 610.65 feet to south rail of north track. Cause of rail toward tunnel N. 70 degrees 57 minutes E. to center of tunnel N. 80 degrees .06 minutes E.

I have laid down the survey on the plat and drawn the lines to intersections as I found them. I first made a traverse of distances and angles and have platted them and believe the lines on the plat are correct.

I did not survey sections 7 and 8 in range 2 east. The distance from the quarter section corner between sections 7 and 8 is given on the plat of section 7 as 25.72 chains, equal to 1,699.5 feet; on section 8 is given as 2,109.5 feet, difference equal to 410 feet. I don't know that either is correct, but believe the last one is. I made a traverse of course and distances across section 7 and it balances nearly.

¶ If I could only find out which track had been moved and how much I could re-run the original line, but would be as much work as to originally locate. There is no great trouble to retrace the canal.

I have 7 and 8 partly ready—will send up when done. I will use the figures that will go in.

Yours,

WILSON.

SUPPLEMENTARY REPORT.

Since writing the above I have surveyed the line of canal across section 7 and the west part of section 8, town. 33, range 2 east, in the town of Utica.

I commenced at the range line on the west side of section 7, and ran eastward along the inner angle of the tow-path, the course and distances on canal plats. I then found the witness to the south line of the south 90 feet appropriation line, viz.: Cottonwood dia. 10 min. N. 30 deg. 45 min. W., 73 links. I then closed on the towpath bank and found the section line at inner angle of towpath was north of original point on appropriation line 86.018 feet showing that said inner angle is now about 5 feet south of original inner line. This is accounted for from the fact that the towpath is a high bank resting on marshy ground and a constant pressure from canal side.

I also find that the south track of railroad is undoubtedly the original center of railroad (see plat). Distance to center of south track due north from point on section line 80.69 minutes.

I then continued as follows, about four feet from and parallel with the water on the tow-path side, to-wit:

N. 78 deg. 05 E. min. 600 pt.

N. 79 deg. 05 E. min. 360 pt.

N. 80 deg. 30 min. E. 1,100 pt. on towpath side, from which point the center of the south track is north 124.43 feet and the edge of the water—north side—is north 106.02 feet, sec. plat. The center line of south track is undoubtedly the original location of railroad, a large part of which is on the 90 foot reserved, and at the west line is close on the water line.

On section 7 it will be seen that the roadbed in two places is close to or encroaching on the water way of the canal.

On section 18, at the cement works bridge, it encroaches on the water line and on section 13, at Split Rock, the waterway is only forty-four feet wide.

From the above it will be seen that the railroad company occupy more than their right of way on section 15 33-1.

On section 14, same town, they are on the 90-foot reserve and encroach on the waterway. It is narrow nearly all the way through section 14. This was owing to the slipping of the roadway.

On section 13 they encroach at Split Rock.

On section 7-33-2 and section 18, same town, they encroach on waterway at points.

On S.W. quarter section 8-33 2, they crowd the waterway at west side.

I have examined records and find that the railroad company got right of way on section 18-33-2, from two parties for same—Temple and Wallace.

On E. one-half S.W. quarter and S. E. quarter, they have title from A. O. Crosier, who bought of canal 90 feet reserved.

On section 8, S.W. quarter, title from Crosier, Ottawa, August 7, 1888.

ROBERT WILSON,
Co. Surveyor.

OTTAWA, ILL., OCT. 15, 1888.

G. F. Brown, Esq., Morris, Ill.

DEAR SIR:—I have examined the railroad record here as to the line north of Buffalo Rock.

Secs. 9 and 17 was canal land. The canal surveyed their lands reserving the 90 and sold the balance. (See your plats and record of sales.)

The Canal Co. sold Wm. Reddick—

W. fr. W. $\frac{1}{2}$ north of the canal.....	76.32 acres
E. fr. E. $\frac{1}{2}$ S.W. north of canal to Downey estate.....	34.28 ..
N. fr. N. E. $\frac{1}{4}$ 17, north of the canal, Wm. Reddick.....	92.78 ..
N. fr. E. $\frac{1}{2}$ N.W. 17, north of canal, M. Morairty.....	72.86 ..

The R. R. plats show that they located and appropriated lands south of the 90 line, as made by their survey, as follows:

On section 9-33-3 S. W. $\frac{1}{4}$	2.76 acres
On section 17-33-3 E. $\frac{1}{2}$ of N.E. $\frac{1}{4}$	1.18 ..
On section 17-33-3 W. $\frac{1}{2}$ N. E. $\frac{1}{4}$	1.77 ..
On section 17-33-3 E. $\frac{1}{2}$ N. W.....	1.27 ..
Total.....	6.92 acres

They received title from Reddick and others, but so far as I know nothing of any deed or other instrument from the canal. Indeed, I believe the Rock Island people are on canal territory.

I thought I would go no further into the matter without further orders. Reddick et al. deeded R of W on canal land. This will appear from inspection of your own records and R. R. plats here.

Yours,

WILSON.

The following memorandum signed by J. C. Hutchins who was attorney for the railway company at the time it was written, explains this side of this controversy:

Sec. 14-33-1.—This was Government land; title derived by condemnation to which the Canal Trustees were parties. Under decision of Supreme Court in Ill. and Mich. Canal vs. Chicago & Rock Island R. R., which is the predecessor of the present company, was held to have been vested by its charter with the right to condemn the canal lands, including the 90-foot strip. I think, therefore, that the canal commissioners are bound by that judgment of condemnation.

Sec. 13-33-1.—Canal land; title through Reddick and through contract or deed with Canal Trustees in Nov., 1866. Canal Commissioners claim that Reddick had no title to the 90-foot strip but concede, as I understand it, that

contract of Nov., 1866, covers this section and removes it from controversy, except as to second track around the tunnel which should be arranged for in some manner.

Sec. 18-33-2.—This was Government land; company claims under deeds from private parties who entered it in 1835, and also by condemnation to which the Canal Trustees were parties. For the reasons stated under section 14 I think the Commissioners are barred.

Sec. 7-33-2.—Canal land; company derives title through deed from Crosser; the Canal Commissioners claim that under original deed to Crosser "90-foot strip" was reserved. If this be so, I suggest that company has title by prescription, because under decision of Supreme Court in 14 Ill., we have the right to condemn. If we have the right to condemn the 90-foot strip, we have the right to purchase, because condemnation is a forced purchase. If we can purchase we can get title by prescription, under our possession, because prescription presupposes a grant, which is essential to a purchase.

Sec. 8-33-2.—This was Government land; our title is by condemnation to which the Canal Trustees were parties. I think they were bound for the reasons set forth under section 14.

The foregoing leaves only the track around the tunnel and section 7 involved, in my judgment. The latter is covered by the doctrine of prescription to which I have alluded.

Now, the Act of Congress of 1822, mentions the 90-foot strip; that act provides that a map of the canal should be filed with the Treasury Dept., within three years or the reservation grant should be void.

Question: Is there any grant under this act?

The act of 1827 grants alternate sections and authorizes the sale by the State of the whole or any part of the granted land in fee simple.

Is there, therefore, any prohibition, so far as Congress is concerned, as to the 90-foot strip?

The foregoing is sketched off hastily, and is not intended to be a full or absolute statement of the case or to bar or to affect either side in case of controversy.

J. C. HUTCHINS.

14 Ill., 314.—The Rock Island & LaSalle was incorporated in 1847 and by amendment made in 1851 the Chicago & Rock Island was created. The last corporation was one of the parties in 14 Ill. The canal acts of 1843 and 1845 were involved and discussed in that decision.

ABSTRACT.

OTTAWA, ILL., Jan. 16, 1889.

William Milne, Secretary Canal Commissioners.

I find the following regarding the railroad rights over the lands of which you left me a list:

1. (Sec. 14-33-1.) I find neither deed nor condemnation proceedings showing right to railroad company.

2. (S. $\frac{1}{2}$ 7-33-2.) Condemnation proceedings law record K, pages 410 to 421, Nov. 14, 1854, condemning so much of a strip of land as lies within 90 feet of north side of canal (60 feet wide at top of water line) 80 feet wide on north side and 20 feet wide on south side of center of R.R. as located through S.E. $\frac{1}{4}$ E. $\frac{1}{2}$ S.W. $\frac{1}{4}$ 7-33-2, 1.84 acres. The center line of R.R. enters E. line of Sec. 25.75 Chs. S. of N. E. corner S. E. $\frac{1}{4}$ of said Sec. and runs thence S. 72 minutes 28 seconds, W. 851.1 feet to commencement of a curve to right at an angle of deflection 2 degrees, 04 minutes, radius 5,729.6 feet, semi-tangent 103.4 feet. Thence in said curve 206.6 feet to end thereof, thence south 79 degrees, 24 minutes, W. 4,429.6 feet to beginning of a curve to left,

thence on said curve at angle of deflection 8 degrees, 30 seconds, radius 5,729.6 feet, semi-tangent 425.8 feet, 1,050 feet to end of curve, thence south 72 degrees, 28 minutes, W. through said E. $\frac{1}{2}$ of said quarter. Damages allowed \$5.00.

3. (N. $\frac{1}{2}$ 18 33-2.)

Volney Wallace & Wf.
to
C. & R. I. R. R. Co.

W. D. Book 34, page 587.
Dated 28 Sept., 1853, filed, 6 Dec., 1853.
Conveying 50 feet each side center line
through N. W. $\frac{1}{4}$ 18-33-2. 3.71 acres.

W. D. Book 34, page 588.

Robt. T. Templeton & Co. & Wf.
to
C. & R. I. R. R. Co.

Date 15 Jan., 1853, filed 6 Dec., 1853.
Conveying strip 20 feet wide on S. side
and 80 feet on N. side of center line
through N. W. $\frac{1}{4}$ 18, subject to rights
of Volney Wallace.

4. (T. W. $\frac{1}{4}$ 8-33-2.) I do not find either conveyance to R. R. Co. or condemnation proceedings affecting this tract.

5. (T. W. $\frac{1}{4}$ 9-33-3.) Condemnation proceedings as in tract 2 of strip 70 feet wide on N. W. side and 20 feet wide on S. E. side of center line of R. R. over S. W. $\frac{1}{4}$ 9-33-3, 2.70 acres, belonging to I. & M. canal. Center line of R. R. enters said qr. Sec. from the east 58.1 feet south of center of section 24, 35, south 33 degrees, W. to commencement of a curve to right 85.5 feet west of section 30 at an angle of deflection 22 degrees, 58 minutes, radius 2,864.8 feet, semi-tangent 582 feet, thence on said curve through said qr. Sec. Damages awarded \$1.00.

6. (S. E. $\frac{1}{4}$ 9-33-3.) Condemnation proceedings as above, 50 feet each side of center line of R. R. &c., through S. E. $\frac{1}{4}$ 9-33-3. 7.53 acres belonging to the I. & M. canal.

Center line of R. R. enters said qr. section 303.6 feet N. of S. E. corner thereof; thence south 69 degrees, west 1,189 feet to commencement of a curve at angle of deflection 31 degrees, 36 minutes, radius 11,460 feet, semi-tangent 3,242.9 feet to west line of said qr. Damages awarded \$1.00.

(9) From all maps it seems to me there is error in this description as R. R. appears to only touch N.W. cor. of S.E. qr. 9 (Leland.)

7. (Also S. W. $\frac{1}{4}$ 9-33-3.) Continued book 32, page 562, deed from Wm. Reddick & Wf. to R. I. & P. R. R. Co. (5 $\frac{1}{2}$.) Dated 22 June, 1853, conveying among others a tract 75 feet wide, 50 feet on north side and 25 feet on south side of R. R. through W. $\frac{1}{2}$ S. W. $\frac{1}{4}$ 9-33-3. (5.2a.) Also a tract 75 feet wide, 50 feet on north side and 25 feet on south side of center of R. R. through N.W. qr. 16-33-3.

5.2b. Also tract 75 feet wide, 50 feet on N. side, 25 feet on south side of center, etc., through E. $\frac{1}{2}$ N. E. $\frac{1}{4}$ 17-33-3. Interest of grantor in this tract being endorsed 1-3rd.

5.2c. Also a tract 100 feet wide, 50 feet each side, etc., line through W. $\frac{1}{2}$ N. W. $\frac{1}{4}$ 17-33-3. N. E. $\frac{1}{4}$ and E. $\frac{1}{2}$ N. W. $\frac{1}{4}$ 15-33-2 and N. E. $\frac{1}{4}$ 13-33-1 (certain reservations as to 13-33-1.)

Also S. W. 9-33-3. A quit-claim deed, book 35, page 354, dated 20 Jan., 1854, from Anna McLaughlin to C. R. I. & P. R. R. of right of way over strip 50 feet on each side of center line over E. $\frac{1}{2}$ S.W. $\frac{1}{4}$ 9-33-3.

7. 16-33 3. See (5.2a) preceding.

8. 17-33 3. Condemnation as in No. 2. Strip of land 80 feet wide on N. side and 20 ft wide on south side of certain line, etc., through 17-33 3 so much of said 100 feet strip as lies within 90 feet of N. side of canal (60 feet wide at top of water line) belonging to I. & M. canal and cont. abt. 4.22a.

Center line of R. R. enters said Sec. from east, 1,976 feet N. of qr. section post and runs thence south 55 degrees, 58 minutes, west of beginning of a curve to right 2,372 feet west of section 72; thence in said curve at angle of

deflection 23 degrees, 58 minutes, radius 2,865 feet, semi-tangent 608.1 feet, 1,189 feet to end of said curve; thence south 79 minutes, 56 seconds, W. through said section. Damages allowed \$1.00.

See also Reddick deed (5.2 b) and (5.2 c) ante.

There are several other conveyances to R. R. Co., but they probably relate to portion outside of 90 foot canal strip.

9. (S $\frac{1}{2}$ 18-33-3.) Book 30, page 584. Receipt from Henry Gooding to C. R. I. R. R. Co., for \$75.00 damages sustained by passage of R. R. over W. $\frac{1}{2}$ S. W. 17 and E. $\frac{1}{2}$ S. E. $\frac{1}{4}$ 18 33 3 N. of canal, 50 feet each side of center line.

Book 27, page 168. Deed filed 12th April, '52. W. J. Esmond to C. & R. I. R. R. Co. Three rods wide on each side of middle line where located by engineer of said company over and through a strip 50 feet wide each side of center line of R. R. over W. $\frac{1}{2}$ S. E. 18-33-3.

Book 29, page 140. Deed dated 21st June, 1852. D. N. Adler and Henry Jerding to C. & R. I. R. R. Co. Commencing at point in center of said R. R. on N. line S. W. $\frac{1}{4}$ 17-33-3. North 79 deg. 56 min. E. from a point 120 feet south of 1-4 Sec. corner between sections 17 and 18; thence south 79 deg. 56 min. west 2,086 feet to west line of E. 1-2 S. E. 1-4 18, including strip 50 feet each side center line 4.73 acres.

There are other receipts, etc., on S. W. 1-4 18, but I am confident that railroad does not come within 90 feet limits there.

The I. & M. canal was made a party to the condemnation proceedings and on confirmation of award excepted to same, but I can not find that any action was taken upon the exception.

Respectfully,

Charges \$3.00.

SHERMAN LELAND.

The contract and deed covered the right of way through sections 13 and 15 Tp. 33-1 and section 15 Tp. 33-2, a total of 1 3-4 miles, besides the lots in La Salle, enumerated for which they paid \$10,524.77.

During the years of occupancy their tracks may have been gradually shifted south and west and now appear to be occupying the 90 foot reserve through the following named sections without having secured the right of way, either from the trustees or from the State of Illinois, except as they claim possibly by prescriptions, which may or may not hold good as against the State of Illinois.

Section	14	Tp. 33	N. R. 1.	1	mile
18	33	2	38	..	
7	33	2	58	..	
8	33	2	12	..	
13	33	2	1	..	
14	33	2	1	..	
16	33	3	18	..	
17	33	3	58	..	
9	33	3	12	..	

A grand total of 5 3-4 miles (a survey might increase or decrease this a trifle). Now occupied without compensation to the canal commissioners.

The telegraph companies are also using the reserve occupied by the C. & R. I. & P. Railway. The right to do so is claimed under contract with said railway company.

The Chicago & Alton Railroad as lessees of the Joliet and Chicago Railroad Company are occupying the 90 foot reserve of the I. & M. canal, and using the same without compensation to the canal commissioners as follows:

Their track enters the 90 foot reserve about 200 feet south of the north line of section 34, below lock No. 2 and continues on the reserve north to a point where the track crosses the section line between sections 26 and 27, Tp. 36, N. R. 10. Total distance, 850 feet. Southwest of the depot at Lemont, the track is very close to or upon the reserve. Commencing 600 feet east of the

west line of section 12 and about one mile east of the depot at Sag, extending east 6,380 feet to a point 1,700 feet east of the east line of section 12, 37, N. R. 11, there appears no margin between their track and the ninety foot reserve. Their track again enters the reserve at a point 1,200 feet west of the center line of sections 6 and 7, Tp. 37, N. R. 12, and crosses at the bend in the canal about three-fourths of a mile southwest of Willow Springs and 900 feet east of the west line of section 5, making a distance of 4,000 feet through section 6 and 900 feet through section 5; total distance 4,900 feet.

From this point 10,600 feet east, there appears no margin between the reserve and track.

Commencing again 1,200 feet east of the depot at Summit for a distance of 27,000 feet north or northeast there also appears no margin between the track and reserve.

Total number of feet upon which their tracks are located, 9,100.

Total number of feet that will require a survey that will determine how much they use, 44,830.

The Alton road has a lease in section 3-38-13 for the outer or southeasterly 40 feet of the ninety foot reserve, commencing 570 feet easterly from the east main track of the Chicago & Western Indiana Railroad extending northeasterly up the canal 2,300 feet, for two side tracks. They also have a lease in section 35-39-13 for the easterly 50 feet; commencing 100 feet west of the Chicago & Grand Trunk Railroad and extending west down the canal 1,200 feet, for side track purposes only.

I can not find among the records of the canal office any letters or entries of any character whatsoever referring to the use of the ninety foot reserve by this company. At the time this road was built John B. Preston was superintendent of the Illinois and Michigan canal. He was also instrumental in securing the right of way for the railway company. They were permitted by Mr. Preston to use the ninety foot reserve for a roadbed without protest from the commissioners. The telegraph are using this reserve for their poles under contract with the Alton road. There are no other occupants of the reserve that can not be easily removed when the canal commissioners choose to assert their ownership or control. Some portions of the reserve were platted and sold by the trustees or laid off into streets for the use of municipalities, as in Ottawa, Morris, Du Page, Joliet and Lockport. As the act of 1822 was subject to the act of 1818, so also the act of 1827, granting lands to the State of Illinois for the construction of the canal, was subject to the act of 1822, reserving forever from sale of the canal 90 feet on east side from the southern boundary of Lake Michigan to the Illinois river. The trustees could not and did not receive from the State the right to sell the reserve. They received only such rights as the State had in the reserve, which was that of control for canal purposes.

RESERVE AGAIN.

The original plats of the sub-divisions of sections 29 and 21, township 39 north, range 14, show a reserve 16 feet in width on the south or east side of the Chicago river, extending through the entire section. This reserve through the major part of section 21 was lost by a sub-division of blocks made by the trustees of the Illinois and Michigan canal in 1848. The sixteen foot reserve through section 29 and the southwest quarter of section 21 is still the property of the State of Illinois, or at least all that portion not absorbed by the widening of the Chicago river. By measurements taken, I found that at many points portions had been washed away, being outside of the government lines. This could be restored if desired by piling and filling. This 16 feet was reserved for towpath purposes.

The following extracts from the record of trustees reports—1845 to 1848—are of importance as referring to this reserve:

TRUSTEES' REPORT FOR 1848, PAGES 303 AND 304.

"The termination of the canal being at Bridgeport, four miles from the harbor of Chicago, it is desirable to provide means for transporting the boats from one place to another." "Two years and more since the trustees en-

deavored to have a towpath constructed from the canal lock at Bridgeport down to the north line of section 16 (school section).” “But this was opposed by the property holders in that section, and some \$60,000 or \$70,000 demanded for the right of way.”

Last spring the board adopted an order for constructing a towpath from the lock to the south side of section 16 along the margin of the stream and through sections 29, 28 and 21. An injunction was served upon the board by an order of court, prohibiting its construction over the northeast quarter of section 21; consequently the work was stopped at the southeast quarter of section 21.

“In the present condition of the towpath it extended about one-half the distance from the locks to the forks of the Chicago river or the middle of the city; that is to say, there is in that extent nearly one and one-half miles from the forks south without a towpath.”

CHIEF ENGINEER'S REPORT, SAME YEAR, PAGE 25.

“With a view to facilitate the passage of boats on the river at a time when the tug boat might be disabled, the board directed a towpath to be made from Bridgeport to the south line of the school section 16. This was made to the center of section 21 or within one half a mile of the proposed termination, when further proceedings were stopped by injunction. The cost of the towpath as far as made was \$340.50 and charged to repairs in division No. 1.”

The marvelous growth of Chicago since its foundation by the canal commissioners in 1830—the loss of all records, municipal and county in the great fire of 1871—the frequent demands for evidence of title affecting property in several canal subdivisions of Cook county and particularly relating to the State's interest in what is known as the wharfing privileges along the Chicago river from Lake street south to Madison street and north to Kinzie street—calls for more than passing notice of this locality.

I have therefore added extracts from the various writings on early Chicago that may shed light upon this subject and may be of interest to the reader.

As early as 1675, Chicago was a designation applied indifferently by explorers to rivers, military posts, routes and country adjacent to the southern portions of Lake Michigan, the name being derived from Chi-ca-gou, the name of a chief of a tribe of Illinois Indians.

The first record of the platting of canal lands into town lots is found in the report of the canal commissioners of 1830.

These commissioners determined to bring into market the remaining canal lands on the 27th day of September at Chicago on the 1st day of October following at the rapids of the Illinois river. In the meantime they laid off into town lots part of section 9, township 39 north, range 14, east of the 3rd P. M., lying on the Chicago river near lake Michigan and a part of section 11, township 33 north, range 3 east, situated at the mouth of the Fox river on the Illinois.

The field notes of the survey of June 18, 1821, gives the width of the Chicago river between sections 9 and 16 now Madison street, at 293 links or 193 38-100 feet and between sections 9 and 10, now State street, at 335 links or 222 10 100 feet. They also state that the river is not navigable south of the forks in section 29. The north fork in this section (29) appears as a “wet” slough extending northwest.

The original canal commissioners' map of Chicago, a copy of which is herewith appended and marked exhibit “B,” was neither certified, acknowledged nor so far as can be ascertained, recorded.

At that time Chicago was an Indian reservation six miles square occupied by soldiers, fur traders and Indians—the county seat being at Peoria on the Illinois river. The law required all maps to be made from a survey by a county surveyor and to be so certified. Also to be certified and acknowledged by the owner or owners of property so platted. Neither of these requirements were complied with. This plat of this subdivision was dated August

4, 1830, and represented the entire south half section 9, and was bounded on the north by what is now Kinzie street—on the south by Madison street—on the east by State street and on the west by Halstead street. That portion of the sub-division lying west of DesPlaines street being represented by six un-numbered blocks. The balance of the sub-division was divided into blocks numbered 1 to 58 inclusive, and these blocks into lots, excepting a strip of land along the margin of the river 80 feet (that being the width of the street as shown on the plat) from the nearest block line parallel with the river and the water line of the river.

Artemus J. Mathewson, a civil engineer in the employ of the commissioners of the Illinois and Michigan canal, continuously from 1837 to some time in the 50ties, and at stated periods thereafter, informs me that the original sub-division of section 9 was surveyed and platted by a Mr. James Thompson of St. Louis, under the direction of Mr. Dunn, the then acting commissioner of the Illinois and Michigan canal; that the water or wharf lots do not appear on this plat because they were not deemed of any value by Mr. Dunn.

A certificate is on file in the canal office in Lockport that reads as follows:

"We the undersigned, late canal commissioners of the State of Illinois, appointed under an act of the General Assembly of the said State, of the twenty-second day of January, 1829, do hereby certify that the foregoing map or plat is the original map or plat of the town of Chicago as laid off under our direction; that the said plat was directed to be recorded in the county of Peoria, being the county seat in which the said land was then situated, but owing to some casualty with which we are not particularly acquainted, it appears not to have been done, and we further certify that all those portions of ground which appear on said plat or front of the streets bordering on and lying between the Chicago rivers and said streets, were designed and intended to be forever left open as public ground, not to be occupied by any persons whatever, and with the ultimate intention to excavate so much thereof as might be deemed necessary for the purpose of widening the rivers if it should be deemed proper to do."

Given at Chicago this 28th day of June, 1836.

GRESHAM JAYNE,
EDMUND ROBERTS.

STATE OF ILLINOIS, }
Co. of Cook.

On this twenty-eighth day of June, in the year 1836, personally appeared before the undersigned, one of the justices of the supreme court of the State of Illinois, Gresham Jayne and Edmund Roberts, to the undersigned personally known to be the same persons who have signed the above certificate, who acknowledged that the foregoing "plat" of the town of Chicago is the original made under their directions and who further stated that the facts as to the omission to record the same are true, and that their statement as to the reservation of the ground in front of the north and south branches of the Chicago rivers is according to the original design and intentions of the then canal commissioners and as then intended to be indicated by the said plat of said town.

IN TESTIMONY WHEREOF, the undersigned have hereto set his name the said 22d day of June, 1836.

THEOPHILUS W. SMITH.

January 15, 1831, 5 month and 11 days after the date of the map, Cook county was organized, with Chicago as the county seat.

In 1831 the canal commissioners donated to the County of Cook several pieces of property for public purposes, as evidenced by the following abstract, to-wit:

ABSTRACT.

Lots one, two, three, four, five, six, seven and eight in block thirty-nine; lot eight in block forty; lots four and five in block thirty-eight; lots one and two in block fifty-six; each of said lots has a front of eighty feet and runs back one hundred and eighty feet, and also lots four and six in block sixteen; lots four and six in block seventeen; lots four and six in block eighteen; lots three and five in block nineteen; lots three and five in block twenty, and lot eight in block twenty-one; the said last mentioned lots having a front of eighty feet and running back one hundred and eighty feet, lying in the town of Chicago.

Now I, Richard J. Hamilton, recorder for Cook county, in the State of Illinois, do hereby certify that the above mentioned and described lots have been granted by patent from the Governor of the State of Illinois, dated tenth day of November, 1831, to the county commissioners of Cook county in the State aforesaid, and to their successors in office, which said patent was recorded on the 7th January, 1832, in Book A, page 20.

In testimony whereof, I have hereunto set my hand and seal of office at Chicago, this 18th day of May, A. D. 1836.

RICHARD J. HAMILTON,
Recorder of Cook County, Illinois.

The original town of Chicago did not include all of the first canal commissioners' subdivisions, but was bounded on the west by DesPlaines street, east by State street, north by Kinzie street and south by Madison street, a plat of which is herewith appended marked Exhibit C.

On March 31, 1833, an act was passed by the General Assembly of Illinois abolishing the office of canal commissioner. All books, papers, vouchers, etc., relating to the canal grant and the acts and doings of the said canal commissioners, were deposited with the Auditor of Public Accounts. This act suspended all interest in the canal or canal matters until the act of 1836 for the construction of the canal. Trespassers, timber thieves, squatters and speculators living along the Chicago river and the line of the proposed canal had full and undisputed sway. Those in the immediate vicinity of the original subdivisions at Chicago appear to have taken prompt measures to secure the full benefit of this opportunity. Many pieces of State property were appropriated for private use, upon which were erected stores, dwellings and other private improvements. The wharfing privileges valued by the trustees in 1848 at \$422,200, were appropriated by the town authorities and subsequently conveyed by them to private interests. Three hundred thousand dollars worth of property was recovered from squatters by the board of trustees soon after the completion of the canal in 1848.

Immediately following the receipt of the notification of the passage of this act, a mass meeting of citizens was called at which the question of the advisability of incorporation was put to a popular vote. Twelve votes were cast for and one against incorporation. In accordance with this vote a call was issued, dated August 5th, 1833, by the clerk of this meeting for an election of town trustees to be held Aug. 10th, 1833. At this date 28 votes appeared and five trustees were elected who met for organization Aug. 12, 1833, and decided to meet regularly the first Wednesday in each month. The town of Chicago therefore dates its legal existence from Aug. 12, 1833.

In 1835 Chicago was granted a charter containing special provisions adapted to the peculiar conditions. In 1836 the first step was taken towards a city organization. A committee was appointed to draft a city charter which committee reported at a mass meeting held January 23, 1837. This report was adopted and a charter was granted in response to this movement March 4, 1837.

From the earliest history of Cook county, by A. T. Andrews, page 141, is found the following relating to wharfing privileges:

"The wharfing privileges of the town were defined at a meeting of the trustees. Owners of lots fronting on the river where a street ran down to the river, might use all but 80 feet of the street for wharfing purposes only,

on the payment of \$15.00 per year. Stipulations were made whereby the town corporation might subsequently purchase any wharfing improvement made on lots leased from the town. Several owners of water lots and others paid the \$15.00 during the succeeding months. Wharfing privileges were advertised in the Chicago American of Nov. 15, 1835, to be sold under lease from the town for 999 years at auction to the highest bidder. Those privileges were sold on time and as the notes many of them were never paid, the privileges went out by default in the general crash of 1837."

From notes and statistical sketches by E. Colbert, book B. 3,168 Chicago public library, "the first map of Chicago drawn from the official survey by Mr. James Thompson bears date of August 4th, 1830. The first boundaries of the incipient town were Madison, DesPlaines, Kinzie and State streets embracing an area of about $\frac{3}{8}$ of a square mile. The board of trustees organized Aug. 12, 1833, with I. J. V. Owens as president, Isaac Harman as clerk. November 6th following they extended the town limits of Chicago as follows: Bounded by Jackson street on the south, Ohio street on the north; by the lake north of the Chicago river and by State street south of the Chicago river on the east; by Jefferson and Cook streets on the west, thereby cutting off the six blocks numbered 10, 11, 25, 26, 47 and 48 west of Jefferson street and east of DesPlaines street. Total area embraced within town limits barely $\frac{7}{8}$ of a square mile. Nov. 7, 1832, the board adopted a simple code of laws for the government of its citizens. At this meeting wharfing privileges were defined so that owners of lots fronting the river where a street ran down to the river, might use all but 80 feet of the street (the water streets being then on the banks of the river) for wharfing purposes only, on payment of fifteen dollars per year. Stipulations were also made for the purchase by the corporation of any wharf improvements on lots leased from the town. Nov. 14, 1835, the board resolved to sell the leases of the wharfing privileges in town for the term of 999 years, binding the board to dredge the river to the depth of ten feet at least, within four years of the sale, and the lessee of the privileges of being bound to erect good docks five feet wide and three feet above the water, within two years from the date of the lease.

The sale of those immensely valuable privileges took place on November 26, 1835, at the store of Messrs. Jones, King & Co., and it may be interesting to remember now the minimum prices at which owners of lots fronting the river had the privilege of buying. On South Water street the price was \$25.00 per foot. On West Water street \$18.00 per foot. The men who got rich in buying such property at such prices deserve no credit for speculative ability. But the board on the 18th of November, 1835, offered still further assistance in their new school of affluence made easy. They then resolved that they would not be bound to dredge the river in making leases on North Water street; consequently they lowered the figure to \$15.00 per front foot in part, and to \$8.50 per front foot on the remainder of the leases.

To aid in paying for leases at this rate, the board took secured notes for three and six months for the first payment of one-fourth the price and gave three years in which to pay the balance. The sale was three times postponed and while waiting for a sale, all picked lots seem to have been taken at a minimum price. When the vendue did take place only six lots remained to be sold and but one of these found a purchaser at \$26.00 per front foot.

These privileges formed the subject of much anxious legislation on the part of the board. "Subsequently" the north side of the river was a mere marsh. It was not until 1848, however, that the building of docks was fairly commenced.

The following is a correct copy of one of those leases for 999 years:

Hiram Hugunin, George W. Dole, Samuel Jackson, Eli B. Williams, Francis C. Sherman, James Kinzie, Alexander Loyd, Walter Kimball and Byram King, Trustees of the Town of Chicago, being a body politic and corporate duly elected, acting in their corporate name and capacity,

To

Barnard Ward, of the Town of Chicago, Cook Co., Ill.
Doc. 11774.

received at and before signing of these presents, and the remaining three-fourths part of the first aforesaid sum is to be paid to the trustees and their successors by whatever name, character or title their successors may hereafter be known and distinguished, as follows, namely: \$562.50 in one year from date, a like sum of \$562.50 in two years from date, and a like sum of \$562.50 in three years from date, each of said payments to bear interest at 6 per cent per annum until the full and perfect payment of the same, and in consideration of the yearly rent, covenants, conditions, provisos and agreements hereinafter expressed and contained, said trustees have let, leased and demised to said second party, his heirs, executors, administrators or assigns, the lot or wharfing privilege in the said town of Chicago, opposite to lot 5 in block 7 in said town of Chicago, as the same was heretofore laid out and described by the canal commissioners of the State of Illinois, being part and parcel of section 9, in Tp. 39 N., R. 14 east of the 3rd P. M. in said State of Illinois. Said lot or wharfing privilege more particularly described as follows: The lots numbered 1 and 2 in the block lettered "I" being each 75 feet more or less, fronting on the first aforesaid lot lying on North Water street and being 50 feet in depth as the same are marked, defined and designated on the plan or profile of said lots or wharfing privileges as the same has been prepared by Edward B. Talcott, town surveyor, under the direction of the said trustees of the town of Chicago, and by them filed and deposited in the recorder's office of said Cook county, Illinois, for public record and for reference in all time to come. A copy of which said plan or profile is also deposited of record with the treasurer of said trustees of the town of Chicago with all the liberties and privileges belonging to the same not herein otherwise provided against. To have and to hold the said described lot or wharfing privilege and every part and parcel thereof to him, said second party, his heirs, executors, administrators or assigns for and during the full term of 999 — from the date of these presents fully to be complete and ended yielding and paying therefor yearly and every year during "the said unto the said "trustees of the town of Chicago and their successors as aforesaid, the yearly "rent of one barley corn at on upon the twenty-third day of the month of "November in each and — demanded;" Provided always and upon condition that if it shall happen that the said aforesaid sums of "five h * * * * and "sixty-two dollars and fifty cents * * * * reon "as aforesaid" or any part thereof shall be behind and unpaid for the space of twenty days next after each of the "sa * * * * hal" shall become due and ought to be paid as is therein mentioned (being lawfully demanded) that then it shall and may be " * * * * said trustees "of the town "of Chicago and their successors as aforesaid to enter into and upon the said "before de * * * * eased lot or wharfing privilege and the same to "retain and repossess." And said second party for himself, his heirs, executors, administrators and assigns hereby covenants, promises and agrees to and with said trustees and their successors aforesaid "that—will—"own" proper costs and charges erect and construct good, sufficient and permanent dock five feet in width along the whole length of the above described and hereby leased lot or wharfing privilege upon the side thereof nearest the river, to be at all times properly and safely covered, and left open at all times for the use of the public as a tow and foot path, the top of said dock to be of a uniform height with the other docks along the whole length of said river, the top or surface of said dock to be three feet above ordinary high

Lease dated Nov. 23, 1835, and recorded January 28, 1875, in Book 502, page 30. In consideration of \$2,250.00 \$562.50 parcel of said sum is hereby acknowledged to have been

water mark and to be completed and finished within two years from the date of these presents, and in default thereof this lease shall become null and void and said above and described and hereby leased lot or wharfing privilege shall revert to said trustees and their successors aforesaid, who shall have full right and power to re-enter upon the same and take the entire and absolute possession thereof and to re-let the same at their will and pleasure.

And it is hereby further covenanted by and between said trustees and their successors aforesaid, and said second party, that the said above described and hereby leased lot or wharfing privilege shall be liable to all such dues, taxation and duties as other lands, tenements and premises of said town of Chicago shall be subject and liable by law to be paid by said second party, his heirs, executors, administrators or assigns.

And it is hereby covenanted and agreed by and between said trustees and their successors aforesaid, and said second party, his heirs, executors, administrators or assigns, that they, said trustees, and their successors as aforesaid, shall not cause any building or buildings which said second party, his heirs, executors, administrators or assigns may erect upon said lot or wharfing privilege for the greater benefit and better use of said privilege to be removed, destroyed or demolished, provided always that such buildings shall be subject to all laws and ordinances of the town of Chicago.

Attested: "In witness whereof the parties to these presents have interchangeably set their hands and seals in duplicate the day" etc.

Signed: "In presence of E. Peck, Clerk."

"HIRAM HUGUNIN
"GEORGE W. DOLE,
"SAMUEL JACKSON,
"ELI B. WILLIAMS,
"FRANCIS C. SHERMAN,
"JAMES KINZIE,
"ALEXANDER LOYD,
"WALTER KIMBALL,
"BRYAM KING,
"BARNARD WARD,

Trustees of the
Town of Chicago.

Not acknowledged.

[SEAL.]"

From the "Northwest and Chicago," by Rufus Blanchard.

"In 1829, on January 22d, the Legislature appointed Dr. Jayne of Springfield, Edmund Roberts of Kaskaskia, and Chas. Dunn to locate the Canal, lay out towns and sell lots. James Thompson, a surveyor of St. Louis, was employed by them to lay out Chicago. The map which he made of the place was engraved on stone in St. Louis and bears the date of August 4, 1830. It was duly recorded on the county records of Peoria, it being the county seat in which Chicago then was. In May or June of 1832, the streets of Chicago had been staked out but no grading had been done, not even a dirt road thrown up. Wagon tracks took a circuitous way from one house to another. In April, 1833, the entire white population did not exceed 200, with much larger Indian population. August 10, 1833, an election was held and a town incorporated. I. J. V. Owen, George W. Dale, Menard Beaubiers, John Miller and E. S. Kimberly were elected as trustees. In 1835 a wharfing lot 50x100 feet on the river immediately west of Clark street bridge, was leased. The terms were \$500 cash down and \$1,500 payable in equal installments of one, two and three years with interest at six per cent per annum, after which time the lessees were to pay an annual rental of one barley corn on the 23d day of November. These were the terms on which the wharfing lots were first leased, but subsequently they were modified to suit a more modern style of business, when the payment of the annual barley corn was no longer demanded. One of these old leases is now in the hands of Mrs. A. G. F. Ramsey. The city will have the right to resume possession of these valuable lots November 26, A.D. 2834. The privileges were thus thrown away by a lot of men who ought to have known better, and with the sale of the magnificent school lands made October 21, 1833, on a petition signed by 23 citizens, forms the two great sores in the history of the city."

From Brown's Illinois, 1844.

In 1835 and 1836, real estate reached prices in Chicago which it never permanently commanded for forty years later. Chicago property was purchased unsight and unseen by speculators in the East, just as mining property is now purchased. July 30, 1836, a communication was received by the canal commissioners as follows, to-wit:

CHICAGO, July 30, 1836.

"GENTLEMEN:—At a meeting of the trustees of the town of Chicago last evening, the following resolution was passed:

"Resolved, that the president of this board be requested to communicate with the canal commissioners on the subject of ascertaining and defining the corners of streets and blocks in section No. 9, as originally surveyed and laid out by that body; and that he be authorized to effect an arrangement with them for this purpose, and when so effected to direct the execution of the same on the part of the trustees of the town of Chicago."

"In pursuance of which I take the earliest occasion to lay this subject before you, merely observing that, already the embarrassment felt by our citizens for the want of established land marks is very considerable, and it is anticipated that delay in fixing them will but increase the difficulty; in view of all which I take the liberty to make known to you my readiness to confer with you for the purpose of adopting the best means to remedy the existing evil, and also to solicit you to name the earliest convenient period when the engineer on your part can commence the examination of the original survey.

"I have the honor to be, very respectfully, gentlemen,

"Your obedient servant,

"ELI B. WILLIAMS,

"President of the Board of Trustees of the town of Chicago.

"To Messrs. W. B. Archer, Wm. F. Thornton and Gurdon S. Hubbard, Esqs., Canal Commissioners, Chicago."

Following the receipt of the above, the canal commissioners in their report for the year 1836, recited that it is a matter of great doubt whether the board "are in possession of the original surveys of the towns of Ottawa and Chicago made under authority of former commissioners—the maps by which they were governed in the late sale and which were the best authority they could find, are not accompanied with the requisite certificates nor have they been legally recorded. No trace can be found of any permanent pillars or other marks by which to ascertain the precise location of corners; even the wooden stakes originally used have mostly disappeared. The consequence is that the inconvenience of uncertainty is growing with time and the value of property, and if not checked will be a fruitful source of litigation. The commissioners would therefore recommend a re-survey in connection with the town authorities; the planting of suitable monuments and recording of accurate maps."

In laying out towns and additions, the law of the State requires the services and certificates of county surveyors. It can be better done by the assistant engineers and if the Legislature approve the suggestion they can at the same time authenticate the plats which accompany this report.

March 2, 1837, the General Assembly amended the act approved January 9, 1836, for the construction of the canal. Section 7 of this amendment reads as follows:

Sec. 7. The said commissioners shall have power to cause surveys of such town lots as they may select to be laid out by such persons as they may think proper. The plats of such towns certified by such persons so employed and said commissioners, shall be recorded in the recorder's office of the county where such town is located, and such plat so certified and recorded or an attested copy thereof shall be evidence in any court of law or equity in this State and plats of such town sites or sections or surveys which have been made and certified by the former commissioners, shall also be recorded in the same manner and have the same validity as aforesaid.

Sec. 13. The canal commissioners shall cause the plats of the towns of Chicago and Ottawa by which they were governed in selling lots in said towns to be recorded with the certificates of the late canal commissioners, endorsed thereon as to the identity of said plats. They shall also have power to extend and perform all duties heretofore required of canal commissioners in relation to alterations in the survey of the town of Ottawa; provided that no rights acquired by individuals shall be affected thereby. The plats of said towns or certified copies thereof shall be admitted as evidence in all courts or places whatsoever.

In 1836 the canal commissioners caused to be surveyed and platted the south and northwest quarters of section 21; the S. E. $\frac{1}{4}$ of section 17; fr. sec. 15; the south fr. $\frac{1}{4}$ of fr. sec. 3; the west part of the south $\frac{1}{2}$ of section 9; all in township 39 N. R. 14, east of the 3rd P. M.

(The S. E. & N. W. $\frac{1}{4}$ of section 21 and the west part of section 9 were replatted by the board of trustees in 1848.)

Responding to the wishes of the board of trustees of the town of Chicago, as expressed in their communication of July 30, 1836, and to the permission of the General Assembly given in sections 7 and 13, above recited, it appears that the board of commissioners certified to a plat denominated "Map of the town of Chicago," as shown by the following, the original of which is on file in this office.

CANAL OFFICE, Wednesday, May 10, 1848.

Whereas, the board of commissioners, of the Illinois and Michigan Canal, did on the 22nd day of May, 1837, as the then proprietors of the same, certify to the correctness of a plat denominated "Map of the town of Chicago," which map or plats was recorded in the recorder's office of Cook county in book "M" page 297, on the 29th day of May, A. D. 1837:

And whereas, certain portions of the ground so platted, and being a part of the original town of Chicago, remained unsold at the time of the passage of an act to provide for the completion of the Illinois and Michigan Canal, and for the payment of the canal debt, approved Feb. 12, 1843, and was embraced in the deed of trust executed by the Governor of Illinois to the board of trustees of said canal, among which unsold lands were blocks numbered seven (7), ten (10) and eleven (11), as sub-divided on said plat.

And whereas, the said board of trustees of the Illinois and Michigan Canal are desirous of vacating such sub-divisions of said blocks.

Now therefore, the said board of trustees, proprietors as aforesaid, in pursuance of an act entitled, "An act to vacate Town Plats," approved Feb. 19th, 1841, do hereby solemnly declare their intention so to do, and do hereby vacate so much of said town plat as exhibits, or makes sub-division of said above described blocks and each of them.

In witness whereof, we the said Trustees of the Illinois and Michigan Canal, have hereunto set our hands, and have caused the corporate seal of said board to be hereunto affixed, this 10th day of May, 1848.

(Signed), W. H. SWIFT,
D. LEAVITT,
CHAS. OAKLEY.

STATE OF ILLINOIS, } ss.
Cook county, }

On this 10th, of May, A. D. 1848, before me, L. C. Kerchival, a justice of peace in and for said County of Cook, personally appeared William H. Swift, David Leavitt, and Chas. Oakley, Trustees of the Illinois and Michigan Canal, each of whom acknowledged that the foregoing instrument was duly executed by them for the uses and purposes therein mentioned.

In witness whereof I have hereunto set my hand and seal, the day and year first above written.

(Signed), L. C. KERCHIVAL, J. P. [SEAL.]

It is quite in evidence that this map embraced not only the original town of Chicago but also all of the wharf blocks then laid out, being A to N, inclusive, and S to V, inclusive, no L, O, P, Q or R appearing. No wharf blocks or lots having been laid out south of Randolph street west of the river and south of Lake street east of the river. It also appears that responding liberally to the request of the trustees acting through E. B. Talcott, their resident engineer in charge of the Summit division of the Illinois and Michigan canal, the commissioners united with the then city authorities and prepared a map dominated "Chicago," with the several additions compiled from the recorded plats in the clerk's office of Cook county, Illinois.

E. B. TALCOTT.

The references given upon this map are as follows:

"Original town as surveyed by canal commissioners in 1830.

"School sections.

"Kinzie's addition.

"Wolcott's addition.

"North Branch addition.

"Section 15.

"Section 22.

"Canal additions.

"Duncan's additions.

"Canal commissioners' additions.

"Carpenter & Curtis additions.

"Capt. B. F. Russell Additions.

"Wahponseh.

"Wright's addition.

"Dressed Beaubien's addition, being all sub-divisions made prior to 1838."

This map purchased from Rufus Blanchard May 23, 1888.

By A. H. BURLEY,
City Comptroller.

On the north and south margin appears "Chicago 1839."

The following correspondence referring to this map may be of interest:

CHICAGO, May 19, 1888.

Mr. Wm. Milne, Secretary, Lockport, Ill.

DEAR SIR:—I am offered, for a large price, a map of the city of Chicago, published apparently in 1835, giving the survey of 1830, lithographed by P. A. Mosiers, Wall st., New York.

You must know if it has special value or any information not obtainable from your office.

Please advise.

Yours respectfully,

A. H. BURLEY,
Comptroller.

CHICAGO, June 7, 1888.

Wm. Milne, Esq., Secretary, Lockport, Ill.

DEAR SIR:—In my former letter I referred to a map of Chicago, made by E. B. Talcott, and lithographed by Currier of New York.

On this map is a note saying that the lots in original town will be sold June 20, 1836.

Talcott was at work for the canal commissioners and though the map says "copied from the records of Cook county" the county record must have been made from copy furnished from the canal office and, although you have no copy, the surveyor's field notes must have been preserved.

I have purchased the Talcott map above referred to and I desire to have the original town and fractional section 15 certified to, so that the authority can not be questioned.

Mr. Mathewson can probably remember about this map and the other matters to which I refer.

Very respectfully yours,

A. H. BURLEY,
Comptroller.

P. S.—When in town call and see map.

The wharfing privileges enumerated by order of the board of trustees in 1850, are as follows. Those blocks used in the widening of the river not included:

- Lots 1, 2, 3, 4—between block 7 and the river.
- Lots 1, 2, 3, 4—between block 8 and the river.
- Lots 1, 2, 3, 4, 5—between block 13 and the river.
- Lots 1, 2, 3, 4—between block 16 and the river.
- Lots 1, 2, 3, 4—between block 17 and the river.
- Lots 1, 2, 3, 4—between block 18 and the river.
- Lots 1, 2, 3, 4—between block 19 and the river.
- Lots 1, 2, 3, 4—between block 20 and the river.
- Lots 1, 2, 3, 4, 5, 6—between block 21 and the river.
- Lots 1, 2, 3, 4, 5—between block 22 and the river.
- Lots 1, 2, 3, 4, 5—between block 29 and the river.
- Lots 1, 2—between block 31 and the river.

The following provisions relating to wharfing privileges comprise all legislation in reference thereto prior to 1847:

Laws of Illinois, 1835, page 205.

An act to change the corporate power of the town of Chicago, in force July 11, 1835.

Sec. 6. The board of trustees shall have power to lease the wharfing privileges of said town giving the to owner or owners, occupant or occupants of the lots fronting the river the preference of sub-privileges.

See laws of 1835-6, page 180.

An act to amend an act entitled, an act to change the corporate power of the town of Chicago, in force January 15, 1836.

SECTION 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly:* That so much of the 6th section of the act to which this is an amendment, relating to the powers of the trustees of said town to lease the wharfing privileges shall not be so construed as to empower said trustees to create or make any lease of said privileges for any one term longer than five years, nor shall any lease as aforesaid be so construed as to give any lessee power to erect any building, store houses or other buildings than a wharf for loading or unloading goods, wares, merchandise or other articles on said wharfing privileges, and all houses, buildings, stores and out houses heretofore erected upon any ground or land situate, lying and being between the south line of south Water street and the north line of north Water street in said town as laid out by the commissioners of the Illinois and Michigan canal shall be deemed nuisances and may and shall be abated, provided in no case shall said trustee have, use or exercise the right of leasing or disposing of any wharfing privileges which may be in front of any lot or lots owned by any individual or individuals or in front of any lot or lots belonging to the State or the canal.

See Municipal Laws of 1856—Chicago.

“An act to incorporate the city of Chicago, approved March 4, 1837.”

Sec. 38.

No power is given by virtue of this act to alter, change or lay out in lots or lease that part of the city of Chicago originally laid out by the commissioners of the Illinois and Michigan canal or section 9, Tp. 39 N., R. 14 east, of the 3rd P. M., which lies between the river and the North and South Water streets or is comprised within said streets.

"An act to adjust and settle the title to the wharfing privileges in Chicago and other purposes."

WHEREAS, Those portions of land, or parts of South Water, North Water, West Water and East Water streets, in the original town of Chicago (on the sides of said streets nearest the river) which lie 80 feet distance from the lines of the lots laid out on the sides of said streets furthest from the river, sometimes known as the "wharfing privileges," are now, and have been for a long time past, made the subject of much controversy between different persons and corporations claiming title to the same; and, *whereas*, as they are now situated, neither the city of Chicago, nor any person or any body incorporate, derive any benefit from the same, except the persons who are occupying them, but they are a fruitful source of discord, dissatisfaction and illegal violence; and, *whereas*, it is for the benefit of all parties claiming an interest therein, that the questions arising as to the title to the same shall be settled and determined as speedily as possible; now, therefore,

Section 1.—Be it enacted by the people of the State of Illinois, represented in the General Assembly, that the common council of the city of Chicago shall have full power and authority to discontinue and vacate any part or portion of South Water, North Water, West Water or East Water streets which lies beyond a line 80 feet distance from the line of the lots laid out on the sides of said streets furthest from the river (sometimes known as "wharfing privileges") or any such parts or portions as lie between the line first aforesaid and the river, and to compromise, adjust and determine all conflicting rights or claims arising between the city and any or all persons and corporations who are or may be claimants of such portion of said streets or wharfing privileges, and, for this purpose, the said common council is authorized to make and establish all necessary ordinances, rules and regulations, and to make, execute and deliver all such deeds, agreements, leases and conveyances, and to enter into, take or receive any and all such agreements as the said common council shall deem proper and expedient touching such premises: Provided, that nothing in this section contained shall authorize said city to do any act which shall deprive any private individuals or corporations, the trustees of the Illinois and Michigan Canal, or the State, of any right, title, interest or claim he, she, they or it may have in and to said wharfing privileges, or portion of streets, as property, without his, her, their, or its consent; and all the rights, if any, of said State, and trustees of said canal are hereby expressly reserved: Provided, that upon all questions arising in said council under this section, a vote of two-thirds of all the aldermen authorized by law to be elected, shall be necessary.

Sec. 2.—For the purpose of adjudicating, settling and determining all the rights of the various parties, including the State, trustees of the Illinois and Michigan Canal, and the city of Chicago, and all and every person and corporation who claims or may claim any portion of said streets or said wharfing privileges, or any interest therein, of whatever name or description the said city, or any person or corporation, claiming an interest in said portions of said streets or land, or wharfing privileges, is hereby authorized to file a bill in chancery in either the circuit court of Cook county or the Cook county court, and to make said State, the trustees of the Illinois and Michigan Canal, the city of Chicago, and every person and corporation claiming any interest in said premises, a party thereto; and said court in which such bill shall be filed, is hereby authorized to hear and determine the same, and adjudicate, decree and determine the respective rights of the several parties to said bill or proceedings, respectfully, fully and particularly; and said court is hereby clothed with full power and jurisdiction to carry into effect all its decrees and determination in the premises; and in case of the failure of any party to execute any deed, conveyance or other instrument required by said court, to empower the master in chancery of Cook county or any commissioner appointed by said court, to make, execute and deliver such deed, conveyance or instru-

ment, and the decision of such court shall be final and conclusive in the premises, unless the same shall be appealed from within ninety days from the entering of the final decree: *Provided*, that in case of appeal it shall not be necessary that the party appealing should enter into bond, but the filing a notice in writing in the clerk's office of said court, signed by such party's attorney or solicitor, shall be deemed sufficient evidence of the taking of the appeal: And, provided further, that notice of the filing of said bill shall be served on the Governor, the secretary of said trustees, and a notice thereof published in three of the newspapers published in Chicago, for sixty days before the day of hearing of said bill: And, provided further, that the ordinary process of summons in chancery shall issue, and be directed to the proper officer or officers, to be executed as in other cases in chancery: And, provided further, that the judge of said court shall have full power and authority to make all necessary orders for the entering of the appearance of any party to said suit.

Sec. 3. In case of appeal, the Supreme Court shall possess as full power in the premises as in other cases of appeal; but the appeal of any party shall not require the said Supreme Court to adjudicate any question which shall not arise between said appellant and some other party to such bill or proceeding.

Sec. 4. The common council of said city shall have as full power to alter, widen, contract, straighten and discontinue North Water, South Water, East Water and West Water streets in said city, as any other streets: *Provided*, that the rights of the State and the trustees of the Illinois and Michigan Canal, if any, shall not be affected, or invalidated, or prejudiced, by any such act of the said common council.

Sec. 5. The said common council are hereby fully empowered to widen the Chicago river and the branches thereof, within the city, from time to time, as they may deem proper and necessary for the commercial business of said city, by cutting away the whole or any part of the streets or lots on the bank of said river or its branches. And in case said common council shall determine thus to widen said river, or either of its branches, by cutting away any lot, lots or part of a lot, such proceedings shall be had, for the condemnation of such lots or lot, or part of a lot, and the assessment of damages and benefits, as are authorized and directed by the act to incorporate the city of Chicago, and the acts amending the same, for the opening of streets and alleys; and the provisions of said acts shall apply to the widening of said river or its branches, as far as they are applicable; but nothing in this section contained shall authorize the taking of private property for any such purpose, without making adequate compensation to the owner thereof.

Approved February 27, 1847.

An act to reduce the law incorporating the city of Chicago and the several acts amendatory thereof into one act and to amend the same.

Approved February 14, 1851.

(Chapter 4, section 4.) The common council shall have power within the jurisdiction of the city by ordinance.

Sec. 4, Par. 1.—To lease the wharfing privileges of the river, at the ends of streets, upon such terms and conditions as may be usual in the leasing of other real estate, reserving such rents as may be agreed upon, and employing such remedies in case of non-performance of any covenants in such lease, as are given by law in other cases. But no buildings shall be erected thereon: *Provided*, no lease for a longer period than three years shall at any time be executed, and the owner or owners of the adjoining lot or lots shall, in all cases, have the preference in leasing such property; but a free passage over the same for all persons, with their baggage, shall be reserved in such lease: *Provided, further*, nothing in this section shall be so construed as to impair or prejudice any rights which any person may have acquired by the acceptance of any proposition heretofore made by said city respecting the wharfing privileges.

Sec. 7 of chapter 5.—All improvements on any school or canal lands or lots, and all improvements on the wharfing privileges in said city, together with

the interest of the lessees or occupants in the premises whether by lease, covenant or deed, shall be subject to taxation, as real estate. And the personal property of the owner of such improvements, shall be liable for such taxes, and upon a failure to pay the same, the collector may levy upon and sell the goods and chattels of such occupant, or lessee, for the payment thereof and costs. And in case such lessee or occupant shall have no personal estate, or neglect to pay the taxes, the interest of such lessee or occupant in such premises, together with the improvements, may be sold as real estate: *Provided*, the purchaser shall acquire no greater rights in the land than the tenant or occupant thereof had, but shall take the same subject to all the covenants and agreements in relation thereto.

Chapter 13, Sec. 13. Any person owning or interested as proprietor in any real estate in said city, whose interests or property shall be injuriously affected by any encroachment upon, or occupying, or use of the public grounds, waters, streets, alleys or other public property, or situate therein for private use, or for the use of any corporation, or individual or individuals, without authority of law, shall have the right to apply to the courts by petition, for the protection of his or her rights, and upon such application, or the hearing of such petition, the courts shall grant him or her such relief, by injunction or otherwise, as may be necessary to protect him or her from such injury: *Provided*, that nothing herein contained shall affect or apply to the settlement or adjustment, or acts authorized under the following acts, to wit: "An act to adjust and settle the title to the wharfing privileges in Chicago, and for other purposes," approved February 27, 1847, and "An act to amend an act entitled, 'An act to adjust and settle the title to the wharfing privileges in Chicago, and for other purposes,' approved February 27, 1847, and 'in relation to wharves and docks in said city,'" approved February 11, 1853, but all such acts are hereby ratified and confirmed.

Sec. 14. The city shall cause a map or maps of the wharfing lots in the original town of Chicago to be made and certified by the city surveyor, and acknowledged by the mayor, and recorded in the recorder's office of Cook county. And the premises contained therein may be hereafter known and described in all conveyances or other papers, by the number of the wharfing lots as laid down on such map or maps. The map of the wharfing lots on the south side of Chicago river, heretofore caused to be recorded by the mayor in the recorder's office in Cook county, shall be taken to be made and recorded in conformity with this section, and shall have the same effect as if made or recorded subsequently to the passage of this act.

An act to amend an act entitled, "An act to adjust and settle the title to the wharfing privileges in Chicago, and for other purposes," approved February 27, 1847, and in relation to wharves and docks in said city.

SECTION 1. *Be it enacted by the people of the State of Illinois, represented in the General Assembly*, That the common council of the city of Chicago, shall have power and authority to discontinue and vacate the whole or any part or portion of North Water, East Water and West Water streets, and so much of any other street in said city as immediately fronts Chicago river or either of its branches, and to compromise, adjust and determine all conflicting rights or claims arising between the city and any or all persons and corporations who are or may be claimants of the fee of any part or portions of said streets, or of any right or interest therein, and upon such compromise and adjustments said city may convey, by deed or otherwise, the fee in such parts or portions of said streets as may be thus vacated or discontinued to such person or persons as said council may deem entitled to the same under the provisions of this act or the act to which this is an amendment; and all deeds or other conveyances which may have been made and delivered, or which may hereafter be made and delivered by said city under the provisions of this act or the act to which this is an amendment, shall be deemed valid and effectual to the conveying, the title in fee of the promise therein described to the person or persons to whom the same are or shall be respectively made their heirs and assigns: *Provided*, That before any such deeds or conveyances shall bar or preclude the rights of any other person or persons claiming an estate in such portions of said street thus vacated or discontinued, such deeds or conveyances shall be approved by the court under the provisions of this

act or the act to which this is an amendment, or an order of the circuit court shall be made upon petition filed by said city or any person or party claiming title under such deeds or conveyances respectively, approving and confirming such deeds or conveyances, upon notice given by publication in at least three of the daily papers published in said city of Chicago, for the space of time required in said act to which this is an amendment, directed to all persons claiming any right or interest in the premises described in said deeds or conveyances, to appear and show cause, if any they have, why such deeds or conveyances should not be approved and confirmed. The provisions of said act to which this is an amendment shall apply to such parts or portions of the above named streets as may be discontinued by virtue of this act, as far as the same may be applicable.

Sec. 2. Appeals from any order of approval or confirmation under this act, may be taken within the time and in the manner and as is provided in said act to which this is an amendment, and not otherwise.

Sec. 3. The city of Chicago may authorize and empower any person or persons to whom any portion of said streets thus discontinued or vacated has been or may be conveyed under the provisions of this act or the one to which this is an amendment to erect wharves and docks, extending into the Chicago river in front of the premises thus conveyed, for the purpose of facilitating the trade and commerce of said river, and to receive and collect reasonable wharfage or dockage for the use of the same; and no person, except the owner of the same, or the person entitled under such owner, shall use or occupy any wharf or dock erected in said city under the permission of the common council thereof, without making reasonable compensation for such use to the owner thereof, or to the party entitled to the use thereof under such owner.

Sec. 4. Every wharf or dock which shall be extended or erected in any portion of the Chicago river or either of its branches, without the express permission or authority of said city, shall be forthwith removed; and if any person or persons shall continue to occupy any such wharf or dock not authorized by said city, after having been notified in writing to remove the same, such person or persons shall forfeit and pay to said city twenty dollars for each day they shall thus occupy such wharf or dock, or suffer the same to remain in said river after the expiration of ten days from the date of said notice, to be recovered by action of debt as other penalties under the charter or ordinances of said city may be recovered.

Sec. 5. Neither this act nor the act to which this is an amendment shall be so construed as to make it necessary to make any other person or corporation a party to any bill authorized to be filed by the last named act, except such persons or corporations as shall have an interest in the fee or private use of so much of the premises, lot or wharfing privilege or street, to settle the title of which such bill may be filed; and the bills which have been or may be filed under said acts may include such parts and so much of the streets, wharfing lots or wharfing privileges as the complainants may see fit to include therein. *Provided*, that the court may require such other premises to be included therein as may be deemed necessary by said court.

Sec. 6. The court in which any suit may be pending under the provisions of the act to which this is an amendment, or of this act, authorized or empowered from time to time, to adjudicate and determine the rights of the respective parties to any wharfing lot or wharfing privilege, or part thereof, and to enter a final decree touching such lot or part of lot, without deferring such final decree until the rights to other lots or premises shall be determined, so that the title to each wharfing lot or part of lot may be adjusted at the earliest possible day, and not be delayed on account of any conflicting claims or litigation respecting other lots or premises.

Sec. 7. The circuit court or the judges thereof may hear and determine all matters arising under this act or the one to which it is an amendment, in vacation, but all final decrees or final orders made therein shall be considered as made and entered at the next succeeding term of said court, in case such

final order or decree shall be made in vacation, as far as the right to except to or appeal from the same, and the computation of time in which such appeal must be taken, is concerned.

Sec. 8. This act shall take effect and be in force from and after its passage.

Approved February 11, 1853.

In 1848 the city council of Chicago commenced by ordinance to vacate that portion of what they were pleased to term the water streets lying 80 feet distant from the nearest block line, to-wit:

SOUTH WATER STREET.

An ordinance vacating part of Water street on south side Chicago river.

Sec. 1. *Be it ordained by the common council of the City of Chicago*, That so much and such parts of South Water street as lie opposite to blocks sixteen (16), seventeen (17), eighteen (18), nineteen (19) and twenty (20), in the original town of Chicago, and north of a line drawn eighty feet distance from the south line of said street, and all such parts of the said street between the north line of Lake street and the west line of Franklin street as lie opposite to block twenty-one (21), in said original town, and north or west of line drawn eighty feet distance from the line of said block twenty one (21), fronting said Water street, and only such parts of said streets as shall be mortgaged to the city of Chicago to secure the payment of such sums of money and the interest thereon as are required to be secured to the city by the provisions of section five (5), of the proposition for settling wharfing privileges on South Water street and East Water street, north of Randolph street, passed by the common council February 11, 1848, in the manner hereinafter mentioned, be and the same hereby are discontinued and vacated: *Provided*, that in case it should be judicially determined upon, a bill to be filed under the act entitled, "An act to adjust and settle the title to the wharfing privileges in Chicago, and for other purposes," approved February 27, 1847, that upon the discontinuance or vacation of said parts of said streets, the fee of the land now contained in the same is in some other party or parties than the city of Chicago, or the said original grantees from the State or their legal representatives, by virtue of a conveyance or conveyances as specified in the second section of this ordinance, then this ordinance shall be null and void.

Sec. 2.—Before the vacation or discontinuance of any part or portion of said streets, as contemplated in the foregoing section shall take place, a mortgage thereof shall be executed to the city by the respective owners of the various portions of land or town lots in said blocks which are opposite to such part or portions of said streets as are proposed to be vacated, or in cases where the original grantees from the State of said land and town lots shall have parted with their estate or interest in such parts of said streets as are hereby mentioned, by those respectfully who are legally entitled to such estate or interest under or by virtue of a conveyance or conveyances from the said original grantees and some intermediate parties or grantees of such land or town lots respectfully, opposite to said street or streets, to secure the payment of such sums of money and interest thereon as are required to be secured to the city by the provisions of said section five of the proposition aforesaid; said mortgage to be drawn and executed in such form and manner as shall be approved by the common council, or the mayor or acting mayor, and be deposited with the clerk of said city within six months of the date hereof. The parts or portions of said streets hereby proposed to be discontinued upon the performance of the conditions aforesaid, are designated on a map of the wharfing lots on South Water street and East Water street north of Randolph street, made by Asa F. Bradley, city surveyor, and filed in the office of the clerk of said city, February 11, 1848, as wharfing lots one (1), two (2), three (3), four (4), five (5), six (6), seven (7), eight (8), nine (9), ten (10), eleven (11), twelve (12), thirteen (13), fourteen (14), fifteen (15), sixteen (16), seventeen (17), eighteen (18), nineteen (19), twenty (20), twenty one (21), twenty-two (22), twenty-three (23), twenty-four (24), twenty-five (25), twenty-six (26), twenty-seven (27), twenty-eight (28), and twenty-nine (29).

Passed February 11, 1848.

West Water street, in front of blocks 8 and 13, vacated Dec. 10, 1855. West Water street, between Fulton and Madison; all of east Water street and north of the river and south of Lake street, were fully vacated and a new West Water street was opened, which is now occupied for railroad purposes.

RESOLUTION CONCERNING WHARFING PRIVILEGES.

In common council, August 18, 1856.

WHEREAS, by an act of the Legislature of the State of Illinois, entitled, "An act to adjust and settle the title to the wharfing privileges in Chicago, and for other purposes," approved February 27, 1847, and by subsequent act amendatory of said act, this common council have heretofore passed ordinances prescribing the manner in which the indentures of settlement with the owners and claimants of the said wharfing privileges shall be drawn, and have, in accordance with said acts and ordinances, settled with a portion of such owners and claimants; and, whereas, there are yet other claimants and owners who have not entered into the settlement in accordance with said acts and ordinances, and thereby the city is deprived of its rightful revenue in the premises; therefore,

Be it resolved, That the mayor and clerk be and are hereby directed to cause all maps, charts and other papers which have been made by order of the city or its officers at the expense of the city, in relation to the settlement of the wharfing privileges in the original town, to be returned to and filed in the city clerk's office.

Be it further resolved, That on presentation to the mayor and clerk of the proper abstracts of title and the indentures of settlement to the wharfing privileges, drawn in accordance with the acts and ordinances aforesaid, the mayor and clerk be and they are hereby instructed to execute such indentures on the part of the city of Chicago, the interest due to be collected on such execution, all of which, when prepared for execution, shall be submitted to this council for approval.

Passed August 18, 1856.

For other valuable ordinances and information, see *Municipal Laws of Chicago* for 1856.

CHICAGO, Aug. 13, 1889.

Wm. Milne, Esq., Lockport, Ill.

DEAR SIR:—On July 13th, 1857, in the case of the City of Chicago vs. the State of Illinois, the trustees of the Ill. & Mich. Canal and others, pending in the Chicago circuit court of Cook county, a decree was entered settling the title to a large number of wharfing lots in Chicago.

Will you kindly inform me whether you have a copy of this decree in your office, or any data relating to wharfing lot 28, opposite to lot 4, block 31, original town of Chicago. Said lot being formerly known as lots 1 and 2 in block lettered "R" and if you have a copy of this decree and it includes lot 28, also inform me, how much a copy of it or of the data you may have will cost. An early answer and oblige.

Very truly yours,

DAVID QUIGG.

CHICAGO, October 9, 1895.

Mr. Merritt M. Arnold, Chief Clerk of the Ill. & Mich. Canal, Lockport, Ill.

DEAR SIR:—In the matter of the Water street wharfage lots I find that a suit was brought about 1847 by the city of Chicago against the State of Illinois, the trustees of the canal and a large number of abutting owners. This suit was pending for about ten years, one or more decrees being entered prior to about 1857. It was expressly stated in the bill to be an amicable suit concerning the question involved in the vacation of the several Water streets. Hon J. Young Scammon represented the city of Chicago and most if not all of the abutting owners. We do not know who represented the canal and the State of Illinois, but think that the counsel for the canal trustees may have made reports and sent a copy of the decree or decrees to them. Hence

I shall be very much obliged if you will make a careful examination of the files in your office and see whether there are any files in the suit in question. Mr. Scammon made reports to his clients which were printed. I have seen one of these but know that there was at least one other. Possibly it may be found among your files of the case. Please to make a thorough examination and let me know as soon as possible whether you have any files in this matter. Possibly it may be found in the correspondence of the attorney representing the trustees at that time. I shall be glad to pay you liberally for your services in this matter. I should like to hear from you by Saturday morning, if possible.

Yours very truly,

EDWIN BURRITT SMITH.

I have been creditably informed that in the matter of the decree claimed to have been entered in 1857, that there is nothing on file in the abstract offices, old or new, to show what lots were in question. Can show, however, that the city was required to quit claim in every instance and is now required to quit claim every time a transfer occurs.

The metes and bounds of the old southwestern plank road, now known as Ogden avenue, appear to have been in controversy among the real estate interests of Chicago. The following is a part of the authority under which this road was originally constructed, the necessary actions of the Cook county commissioners having been previously secured:

Know all men by these presents: That whereas Theodorus Doty, Robert Hugunin and Isaac Cook, in company with others, are about to construct a plank road from the city of Chicago in the county of Cook and State of Illinois to the Des Plaines river, aforesaid, under and by virtue of a license from the county commissioners' court of the county aforesaid, to the said Theodorus Doty, made and granted at the June term of the said court in the year of our Lord one thousand eight hundred and forty-seven, which said plank road has been duly surveyed and the lines thereof ascertained by Hiram P. Woodworth, engineer, commencing on the west line of township thirty-nine north, of range fourteen east of the third principal meridian in said county and running thence in a straight course eighty feet in width to the middle of the Des Plaines river, the location of said road according to said survey being more particularly described as follows, viz: The easterly terminus of the north line of said road being at a point in said township line twelve chains and thirty-eight links south of the northeast corner of section twenty-four in township thirty-nine north, of range thirteen east of the third principal meridian in said county, and the easterly terminus of the south line of said road being at a point in said township line south of the aforesaid mentioned point, such distance as will make the said road continuously on said course hereinafter described eighty feet in width. The said road to be extended from said township line to the Des Plaines river eighty feet in width on a straight line, such a course that a straight line run through the center of said road from the township line aforesaid to the Des Plaines river would cut the center of the south line of section thirty-six, township thirty-nine north, range twelve east of the third principal meridian, cutting said section line where the same is cut by the quarter section line of said section.

And whereas said road according to said survey crosses certain lands and premises the property of the trustees of the Illinois and Michigan canal:

Now, therefore, in consideration of the premises, we, Wm. H. Swift, David Leavitt and Charles Oakley, the trustees aforesaid, do hereby authorize and empower the said Doty, Hugunin and Cook, their heirs or assigns, to survey and make through the lands of the said trustees, being canal lands, the route of the said road eighty feet in width between the said termini, and the use thereof forever shall be and the same is vested in the said Doty, Hugunin and Cook, their heirs or assigns, for a plank road and for no other purpose whatever, on condition that said road shall be constructed within two years from the date hereof, and be at all times kept in repair, and when the

said road shall be ceased to be used for a plank road as aforesaid, or shall be suffered to remain for an unreasonable time out of repair, the said right of way shall revert to said trustees.

In witness whereof said trustees have hereunto set their hands and seals this the 4th day of November, 1847.

(Signed) W. H. SWIFT, Pres't, [SEAL]
D. LEAVITT, Trustee, [SEAL]
CHAS. OAKLEY, Trustee. [SEAL]

Attest:

ROBERT STUART, Secretary.

The canal commissioners of 1830, caused a survey and map to be made of the town of Carbonia (now Ottawa) at the mouth of the Fox river on the Illinois by James Thompson or James Edgar Thompson, supposed to be one and the same person. The map bears date of July 5, 1830, and is among the files of canal records. It bears the following endorsements, to-wit:

We, the undersigned, late commissioners of the Illinois and Michigan canal, hereby certify that this map of the town of Ottawa is the identical map or plat by which we were governed in selling lots (belonging to the State of Illinois) in the said town on the twenty-sixth day of September last past. The president of the board was absent at the time said lots were sold.

Given under our hand at Chicago, this 22nd day of May, 1837.

W. B. ARCHER,
G. S. HUBBARD.

Given under the hand and private seal of the secretary of the board of commissioners of the Illinois and Michigan canal (no official seal being provided), at Chicago the 29th day of May, A. D. 1837.

(Seal.)

JOEL M. MANNING, Secretary.

State of Illinois, }
LaSalle County. }

This is to certify that the foregoing map was duly transcribed and recorded on book 7 of records, page 277, this 17th day of May, A. D. 1841.

J. W. ARMSTRONG, Recorder.

The map of Carbonia appears to have been certified and recorded in compliance with the provisions of the act of 1836, authorizing it for Chicago and Ottawa. There has been presented in the preceding pages an affidavit by the canal trustees, duly acknowledged that the original map of the town of Chicago was certified by the canal commissioners in 1837.

It is fair to presume that the certificate of W. B. Archer and G. S. Hubbard and the signature and private seal of Joel Manning, Sec'y, were on the map of the town of Chicago in substantially the same manner and form as it appears on the map of Carbonia.

There were six sub-divisions made by the canal commissioners in 1836, namely:

A sub of the S. E. $\frac{1}{4}$ Sec. 21-39-14, Chicago.

A sub of fr. Sec. 15-39 14, Chicago.

A sub of west part of Sec. 2-9 39-14, Chicago.

A sub of S. E. $\frac{1}{4}$, 17-39 14, Chicago.

A sub of south fr. $\frac{1}{4}$ of fr. Sec. 3 39-14, Dutch settlement.

A sub of Sec. 23 36-10, Lockport.

An addition to the town of Ottawa in 1838.

And a sub of the town of Ottawa in 1842.

The maps exhibited in this report are three in number. Exhibit A is a map of the first survey for a proposed canal made in 1824. The plate from which this map was produced is preserved for future use in the canal office at Lockport, Ill.

Exhibit B, is a map of the first canal commissioner's sub-division of Chicago, made in 1830, being the south half of section 9-39-14 E. 3rd P. M. Exhibit C is a map of the so called original town of Chicago, as defined by the first board of town trustees in 1833. In November, 1833, the boundaries were enlarged on the north and south and one tier of blocks taken off on the west.



TO WHOM IT MAY CONCERN

We hereby certify that the plat of the "Original Town of Chicago" as herewith shown in "Blanchard's History of Chicago, is a facsimile copy of a plat of said Original Town shown on page 13 of our Atlas of the City of Chicago, published September 1st 1889 except the lines, words and figures in red showing the present dock lines of the Chicago River, which were not shown upon the original plat.

The recorded plat of the Original Town was destroyed with other records of Cook County, in the great fire of October 9th, 1871, and the plat in our Atlas was a correct copy of a plat forming part of an abstract of property in said Original Town made by Messrs Handy & Co., Abstract makers, and belonging to the estate of the late Isaac N. Arnold.

We were familiar with the said recorded plat, and we believe the plat herewith shown of the Original Town of Chicago to be an accurate copy of said recorded plat with the exception of the lines etc. shown in red ink indicating changes in the margin of the Chicago River.

GREELEY HOWARD COMPANY.

Surveyors and Publishers of Atlases.

In the various histories of Illinois there has been little said of the Illinois and Michigan Canal. The work was national in its character and its progress was observed with intense interest throughout all the states. The interest which the general government had taken in the project is evidenced by the act of Congress changing the northern boundary lines of the State, by purchasing from the Indians a strip of territory extending from the Illinois river to Lake Michigan—by the act of Congress of 1822 granting the right-of-way to the State and the act of 1827 granting land to defray the cost of construction.

The history of the canal is so interwoven with the early history of the State that in leaving it out of consideration, the historians were leaving out much that is now of interest. The teachers in the public schools of Chicago and Joliet are interesting themselves in its early history for educational purposes.

Prior to 1836, the magnitude of the undertaking was little understood by the majority of our State Legislatures and our people generally. The agitation of a deep waterway to connect the Great Lakes with the Mississippi was begun in 1812 during the war with Great Britain, and was vigorously commented upon by the "Niles Register" of that period. That such a waterway would ultimately be accomplished, was the opinion of the men engaged in the construction of the canal. In 1842, William Gooding, an accomplished engineer, employed from 1836 to 1871 in the work of construction, etc., wrote as follows:

"In constructing the Illinois and Michigan Canal of the dimensions now adopted, reference has generally been had to a future enlargement. Through all the canal towns the canal is nearly double and in some instances more than double the ordinary width. In deep cutting, the spoil banks were removed a sufficient distance to leave room for widening and deepening. In few instances, if any, would there be any additional damage to be paid for property. However remote the period may be, that it will be enlarged sooner or later, there can be no doubt. And also that the Illinois river will be so improved as to meet the enlarged capacity of the canal."

All the documentary evidence that can be found at the State capitol at Springfield or among the canal records, has been reproduced, consisting of the reports of the early commissioners and engineers (many of them never before published), extracts from messages of the Governors, from Session Reports, and Reports of Committees of the House and Senate, on canal and canal land.

I have also compiled such documents and records of a later date, as show the present condition of the 90-foot reserve—the encroachments thereon by the Rock Island and Alton Railways, and all the laws, charters, ordinances and other documents relating to the original town of Chicago or rather to the south $\frac{1}{2}$ of section 9, township 39 north, range 14 and the vacant space left by the Commissioners of 1830, for public use along the margin of the Chicago river. This space is now occupied as private property. In all the acts of the Legislature relating to the wharfing of Chicago, the rights of the State and of the Canal Commissioners were reserved. There are no records of the title having been passed from the canal by its officers.

Respectfully submitted,

E. W. WILLARD,

Land Agent.

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